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ABSTRACT

This study examines the organization of public 2-year colleges and relates it with goal achievement as represented by curriculum size and complexity. The research questions concerned: (1) range and distribution of size and age in the colleges; (2) range and distribution of curriculum size and complexity; (3) the relation of increased size or age to an increase in curriculum size or complexity; (4) range and distribution of faculty size in relation to size and age of the college; (5) any regional differences in size, age, and curriculum; (6) range and distribution of administrative size and of centralized curriculum control; (7) range and distribution of departmentalization and operational levels; (8) relationship between administrative size, centralized curriculum control, and curriculum size and complexity; (9) relationship between operational levels, departmentalization, and curriculum size and complexity. The findings provide suggestions for answering the questions, but also post other questions for exploration and the development of hypotheses to be tested. (HH)

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FINAL REPORT

Project No. O-E-112
Grant No. OEG-5-070-0049 (509)

A STUDY OF PUBLIC TWO-YEAR COLLEGE ORGANIZATIONAL STRUCTURE AND DEVELOPMENT OF TECHNICAL CURRICULA

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CHAPTER I

INTRODUCTION

Summary of the Project and Findings

This exploratory and descriptive study of the organizational structures of public two-year colleges is concerned with the relationship between the structural arrangements of these colleges and their functions as indicated by the comprehensivity of their curricular offerings. Are there organizational structures which are strongly associated with a more comprehensive curriculum as indicated by increased career or vocational curriculum? What organizational variables are most strongly associated with career programs?

The study attempts to utilize data from public documents issued by the colleges and summary reports by The Department of Health, Education and Welfare based on The Higher Education General Information Survey. Complete information was obtained for 201 (39%) of the 613 public two-year colleges listed in The Educational Directory, Part 3, 1968. The colleges supplied organizational charts, catalogues and schedules.

Parsons' functional model of organizational activities was used to arrange the variables. Size and age viewed as independent variables were adaptive functions in terms of the Parsons' model. Curriculum size and the percentage of curriculum devoted to career or vocational courses were treated as goal achieving functions, dependent variables in relation to organizational size and age. Integrating functions or intervening structural variables focused on centralization and departmentalization. Four intervening variables were investigated. Two indices of centralization were selected, total administrative size and single versus multiple curriculum control positions on the second organizational level, subordinate to the chief executive officer. The two indices of departmentalization used were the hierarchical levels elected by the college and the discrete number of departments or divisions utilized on the third organizational level.

Contingency tables were constructed to establish both a profile for the colleges and comparable categories for analysis.

Size and age categories were of approximately equal weight. Pearson product moment correlations were used to investigate strength of association between the variables.

Size and age were established as independent variables. Size proved to be most positively and strongly related to the dependent variables. There was a weak positive correlation between age and curriculum size and career offerings. Curriculum size and career offerings were positively related to a relatively strong degree.

The intervening structural variables representing centralization provided some insight into the structural activities of the two-year colleges. Administrative size is positively, yet modestly related to organizational size, weakly to age, and just above the significance level with the dependent variables, curriculum complexity and size. The colleges divide almost equally between those who have a centralized or single dean responsible for all curriculum and those with multiple positions who divide career and transfer curriculum responsibility on the second organizational level.

Colleges with a single position or dean offer 10 per cent more vocational programs and have 20 per cent larger curricular offerings than colleges with multiple deans who report to the chief executive officer.

When the structural variables related to the division of labor or departmentalization were investigated, there was a very strong positive correlation between the number of organizational or hierarchical levels and organizational size. The relation of organizational levels to the dependent variables while positive was less than half as strong as that with size.

The number of departments on the third organizational level is weakly related to size and not significantly with age. There is however, a very strong positive relationship between an increased number of departments on this level on the career curriculum offerings. Total curriculum size is also strongly related to the number of divisions or departments utilized on this level.

The strong relationship between organizational size, curriculum size and career curriculum suggests that environmental variables such as population and economic

factors such as business and industrial activities should be further investigated.

When age categories are examined, these colleges appear to maintain slightly more than one third of their curriculum offerings in career or vocational programs.

Divisional or departmental autonomy at the third level is strongly associated with a more comprehensive curriculum. A single dean or director for curriculum and instruction is also more strongly correlated with curriculum complexity and size.

The finding from these data indicate that it is possible to utilize data from the selected sources for organizational studies. The assertion by some authorities that decentralized curriculum control at the second level is essential to the growth of career curriculum is not supported. Centralized second level control related most strongly with increased career offerings.

The two-year colleges reflect the classical pattern of polarization between professional and bureaucratic authority. Decentralization on the third organizational level where professionals function is strongly associated with increased curriculum size and career offerings which is an expressed goal of these colleges. On the second level where administrators are most active, a larger curriculum size and career offerings are associated with centralized control positions.

Of the four intervening structural variables investigated, neither the size of the administrative component or the number of levels utilized to organize college activities related strongly with either increased curriculum size or career offerings, the indices of comprehensive programs. On the other hand both variables, the centralized control of curriculum at the second level and the number of departments on the third level, were positively and strongly related to the dependent variables, curriculum size and career program size.

Broadly conceptualized from the Structure-Functional point of view the questions asked originally by this study sought organization correlates related to goal achievement. Analysis of these selected data suggests that there are structural arrangements which correlate significantly with organizational goals as expressed by a comprehensive curriculum. The colleges do realize and maintain technical curricular offerings and there are structural arrangements which correlate significantly with increased technical course offerings.

Introduction

Increasingly, higher education has become a center of attention and national concern. Several commissions have issued specific proposals for improving the performance of colleges and universities.[1]

Social interactions in higher education are among the most complex and sophisticated behaviors of man. Creating new knowledge and communicating the central societal and cultural knowledge involves the campus in an intricate web of fragile, easily fractured relationships.

The continued concern of public, students, and faculty about the structure of higher education has resulted in a flood of articles--polemical, prescriptive, or pejorative in nature. Their oversimplified suggestions often reflect a total innocence of experience regarding the organizational intricacies of higher education.

Although the goals of higher education remain diffuse and undefined, colleges and universities continue to be evaluated without considering this limitation. Current proposals to restructure these organizations ignore even the modest knowledge available regarding present structural arrangements.

The traditional structure of American higher education involved either independent colleges, professional schools, or graduate schools which shared a campus with them. Because their resources were relatively stable, growth was a selective process of matching faculty and students to available resources. Organization was simple, and changes evolved as new situations arose.

Knowledge created on the campus has generated demands which overreach higher education's traditional capacity. Demand for trained manpower is one of the forces which has brought American higher education to its present size and status. The factors which exponentially expand this demand are growing. A college must organize itself to meet the consequences of its earlier success.

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[1] Priorities in Higher Education, Report of the President's Task Force on Higher Education (Washington, D.C.: U.S. Printing Office, 1970); Third Report, National Advisory Council on Vocational Education (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, July 10, 1970); The Scranton Report, President's Commission on Campus Unrest, "The Chronicle," Volume V, Number 2, October 5, 1970.

Philip Hauser, speaking of the new role in higher education of two-year colleges, views their development as necessary because, "for the first time in our nation's history, public education has failed to prepare adequately a whole generation of urban Americans for the increasingly complex world of tomorrow."[2]

An ideal college in another century may have been a log with Mark Hopkins on one end and a student at the other. Contemporary colleges require a new analogy. They need to be bridges across the chasm between known present problems and unknown conditions for social survival. Their structures must be cantilevers solidly built on present knowledge, capable of supporting traffic of unpredictable proportions into the unknowns of man's future.

Accelerating industrialization, urbanization, and technological development generate new categories of employment, expand the division of labor, and escalate the level of training needed to qualify for employment in most occupations. Two-year public colleges have recently evolved within the traditional structure of higher education to deal with increased population of college students, to expand educational opportunity to larger numbers of citizens, and to enlarge the scope of post-secondary education to include new careers in new occupations as they develop.

The goals of the two-year colleges are more recently formulated, less global, and more specific than those of the older colleges and universities. They claim both social and educational relevance because their comprehensive curriculum reflects the spectrum of the larger social order.

This is an effort to gather, organize, and compare data which accurately portrays existing organizational structure of public two-year colleges in America.

Toynbee sees organization as the basis of civilization. As the Northern portion of Africa desiccated the Nomads responded by organizing, damming the Nile, irrigating the fields to produce a quality of life never before known on that continent.

Present manpower needs threaten to evaporate the economic resources upon which higher education depends.

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[2]Philip M. Hauser, "Social Change and The Junior College," in Selected Papers: 47th Annual Convention (Washington, D.C.: American Association of Junior Colleges, 1967), p. 9.

This places man in an environment similar to his nomadic North African predecessors. It is imperative to organize and channel the flow of knowledge for instruction and application to provide a new quality of life for the world in our time.

The 2,537 institutions engaged in higher education in the United States are central to the conduct of national life. They constitute man's most sophisticated means for the development and dissemination of knowledge, as the interval between the discovery of knowledge and its application collapses, their structure and function becomes more crucial and subject to scrutiny.

While selectivity and limited enrollments of planned dimensions have been a characteristic of the majority of colleges and universities, this is not true for the public two-year institutions. An "open door philosophy" is their primary characteristic. Unanticipated growth has been a major consequence of this philosophy.

This "enfant terrible" has assumed a major responsibility in higher education. No study of their growth and development has provided more than a casual description of their structural arrangements.

A secondary characteristic is their functional goals which express a common philosophy. These reflect an adaptation to the community needs--educational, occupational, and often social. Linked by proximity, ideology, and economic support to the ebb and flow of community life they represent, in Blocker's terms, a "social synthesis."[3]

These functional areas are generally considered necessary for their success:

1. Transfer Programs are usually in traditional disciplines, may be pre-professionally oriented and are accepted for full credit by a university or college.

2. Occupational Programs are aimed at preparation for employment--either directly upon completion of the community college or eventually upon completion of additional education.

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[3]Clyde E. Blocker, Robert H. Plummer and Richard C. Richardons, The Two-Year College (Englewood Cliffs: Prentice-Hall, Inc., 1965), p. 221.

3. Developmental Programs for secondary school graduates and adults who lack the necessary preparation to begin either transfer or occupational programs or profitable employment.

4. Community Service Programs for adults for either employment, career retraining, skills updating, or personal growth and enrichment.

5. Student Services--testing, counseling, occupational guidance, student activities, organizations, and individual appraisals.[4]

Theoretical Considerations

Theories Utilized

Two-year colleges supported by the public were the most striking structural development in higher education during the past decade. Just as the Morrill Act of 1862 involved new people in the land grant colleges and revolutionized the curriculum of higher education, these colleges, with their "open door" policy of admissions and "comprehensive curriculum" goal, are reshaping the service philosophy of higher education.

These carefully planned organizations have been well researched by psychologists and student personnel specialists. Aside from Burton Clark's work of a decade ago, few sociologists have examined this emerging phenomenon.[5] Because they are unique social mechanisms formulated for specific goals the research of scholars of higher education and formal organizations may be directly related to their analysis.

Dimensions of the Two-Year Colleges

The two-year college's recent development, diverse size, curricular complexity, and social proximity are stimulating characteristics to a researcher. Their structural behavior may have some relevance for other segments of higher education confronting identical problems.

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[4]Norman C. Harris, Technical Education in the Junior College (Washington, D.C.: American Association of Junior Colleges, 1964), p. 53.

[5]Burton R. Clark, The Open Door College (New York: McGraw Hill, 1960).

Structures developed in these laboratory like microcosms could be heuristic experiences for the macracosmic universities searching for structural alternatives.

During the past 60 years the development of more than 900 two-year colleges has effected a major change in our system of higher education. More than 50 new two-year colleges were organized in 1967. Their growth in enrollment exceeds even the predictions of the most knowledgeable scholars of community colleges. Harris, in 1964, predicted that by 1970 there would be 600 public two-year colleges enrolling 1.5 million students.[6] In 1968 there were 613 in operation; by 1970 there were over 800.

The U. S. Office of Education reported that 708 public two-year colleges enrolled 1.7 million students in 1968 and over 2,000,000 in 1970. An increase of 70 per cent is predicted by 1977. Twelve-thousand students enrolled the first day the new community college opened in Seattle.

The Office of Education defines these organizations as: two years but less than four years of work beyond the 12th grade. This includes junior colleges, technical institutes, and normal schools offering at least a two-year program of college level studies.[7]

The egalitarian ideal that equal educational opportunity should be available to every citizen needs little support. The growing needs of a complex society in an industrial nation which requires training far beyond the high school level contributed to the development of other functions than mere college transfer programs.[8]

The older "scholastic" view that higher education exists for the elite has been eclipsed by the "societal" position that opens higher education to all students and seeks a universal higher education.

Frankel, in a terse review of the major ideological issues confronting universities, focuses on the need

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[6]Harris, op. cit., p. 18.

[7]Education Directory, 1968-69, Part III, U.S. Department of Health, Education, and Welfare (Washington, D.C.: U.S. Printing Office, 1968), p. 6.

[8]Earl J. McGrath, Universal Higher Education (New York: McGraw Hill, 1966), p. ix.

to harmonize the disparate traditions of higher education as well as domesticate them within a mobile, technical democratic system.

He considers the undergraduate and graduate systems as essentially different in both function and tradition. The undergraduate college experience focuses upon the development of an individual, the furnishing of a person in the Anglo-Saxon traditions. Graduate education in contrast rests upon the German tradition of research and disciplinary development of a few selected scholars whose liberal education has been completed.[9]

James Conant reinforces these conclusions in the recent Carnegie Commission Report on Community Colleges by calling for an additional 280 colleges by 1980, terms them the "expression of a new social policy."[10]

Two-year colleges are attempts to meet the needs of individuals and bridge the hiatus between the quest for new knowledge and the application of this knowledge to individual, social, and political community life. This ambitious stance places these organizations at the nexus of social, economic, political, and humanistic concerns.

Medsker's study of the 50's indicated that even these new organizations were weak in achieving their educational goals and were forfeiting their identity by following transfer programs too closely.[11]

The Vocational Education Act of 1963 was a direct attempt to reverse this trend and expand the scope of their curriculum to reflect total community needs. In 1968, this Act was greatly strengthened by amendments.[12]

The two-year colleges, as presently operated under state, federal, and local sponsorship, are more carefully planned than any previous organizations in higher education. If they are to be successful they must be new

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[9]Charles Frankel, Issues in University Education (New York: Harper, 1959), p. 152.

[10]The Open Door Colleges, Carnegie Commission on Higher Education (Hightstown, N.J.: 1970), p. 51.

[11]Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw Hill, 1960), p. 112.

[12]"Two Legislative Landmarks in One Month," Junior College Journal, XXXIV (February, 1964), 4-5.

structures, experimental in design and not replicas of either secondary or university experiences.[13]

Clark demonstrated that the location, curriculum control, and funding of these colleges limit their autonomy and frequently force them into traditional patterns.[14]

Blocker confirmed this and carefully outlined the multiple external and internal group pressures which must be resolved before a community college is able to adapt to its environment and attain its goals. Twenty-two public and twelve professional community groups or agencies were designated as involved in various ways with the organization and operation of the two-year colleges.[15]

Astride the anastomotic steam of cultural, social, technical, and economic concerns that comprise a mobile democratic America, their efforts to serve students, community, and the traditions of higher education are matters of record. Their adaptive and integrative behavior will be investigated by utilizing statistical records, organizational charts and catalogues.

Organizational Studies of Higher Education

Any contemporary view of complex organizations incorporates original sociological concerns with social organization.

Durkheim observed that as population grows the complexity of organizational forms increases.[16] Spencer and Simmel focused on the complex forms of communications necessary to facilitate the operation and existence of larger organizations.[17]

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[13]Henry Steel Commanger, "Social, Political, and Personal Consequences," in McGrath, op. cit., p. 17.

[14]Clark, op. cit., p. 170 ff.

[15]Blocker et al., op. cit., p. 54.

[16]Emile Durkheim, On the Social Division of Labor in Society, translated by George Simpson (New York: MacMillan, 1933), Part II.

[17]Herbert Spencer, Principles of Sociology (New York: Appleton, 1898), Vol. I, p. 525.

Parsons' analysis of formal organizations views them as mechanisms which mobilize power in modern society for the attainment of collective goals.[18] Four functions are necessary for the organization: (1) Adaptation--interaction between environment and the organization; (2) Integration--coordination of internal units; (3) Goal achievement--objectives defined and resources utilized to attain them; and (4) Latency--sustaining motivation and cultural identity.

Organizational technique has far outrun any theoretical framework.[19] Blau and Scott do not view this as a negative state of affairs for the present definitions and theoretical models often obscure the researcher's view of formal organization and block off the less contrived or natural types of behavioral patterns.[20] The inability of much previous research to get at substantive problems in the organization of higher education is a result of models which were not comprehensive enough to be productive when dealing with the existing structural variables.[21]

There is no general agreement regarding the nature of organization in higher education. Caplow, Etzioni, as well as Blau and Scott, include universities in their comparative studies of formal organizations.

Riesman and Jencks tend to treat them as institutions. Stroup would, on the other hand, call them bureaucracies. Flexner apparently would agree with Stroup for he believed that a common goal inextricably linked all units of the college.[22]

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[18] Talcott Parsons, Structure and Process in Modern Society (Glencoe: Free Press, 1960), p. 17.

[19] James G. March, Handbook of Organizations (Chicago: Rand McNally, 1965), p. XIV.

[20] Peter M. Blau and W. Richard Scott, Formal Organizations (San Francisco: Chandler Publishing Company, 1962), p. 7.

[21] Edward Gross, "Universities as Organizations," in American Sociological Review, XXXIII, No. 4 (August, 1968), 518.

[22] Christopher Jencks and David Riesman, The Academic Revolution (New York: Doubleday, 1968), p. 18.

Recent studies found that failure to keep pace with society characterized the four-year colleges.[23] Graduate schools could not keep curriculum relevant to the expanding knowledge of their field.[24] Unable to meet its varied purposes, the two-year colleges had settled into an imitation of the four-year colleges.[25]

The findings are suggestive rather than definitive. Despite an emphasis in recent literature on the "revolution" in higher education, careful reading does not substantiate these claims. Evans found innovations were often widely publicized and as reversion occurred quietly dropped.[26]

These sources mention, but seldom confront, the structural design or its relation to their concerns.

Research in two-year colleges has concentrated on either student personnel problems, operational problems of finance, community support, legislation, faculty-personnel relations, or instructional effectiveness. The related literature in the Administration of Higher Education relevant to an understanding of the two-year college is anaecdotal or historical in nature.

In an age of research and communication we may know more of the organization of higher education past than present. Proposed changes of structure without more contemporary data may be useless.[27]

Studies of graduate, professional schools, and universities were undertaken during the late fifties. These findings were precursors of much of the current literature. In general they found a dual faculty-administration structure which tends to resist change in favor of the status quo. Students were generally

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[23] Nevitt Sanford, ed., The American College (New York: Wiley, 1962), p. 2.

[24] Bernard Berleson, Graduate Education in the United States (New York: McGraw Hill, 1960), p. 18.

[25] Medsker, op. cit., p. 112.

[26] Richard I. Evans, Resistance to Innovation in Higher Education (San Francisco: Jossey-Bass, 1968), p. 154.

[27] William E. Moran, "The Study of University Organizations," in The Journal of Higher Education, p. 149.

disillusioned with the educational system. McGrath found professional schools increasingly offered more liberal arts studies.[28]

Caplow and McGee were generally interested in morale of faculty in relation to the size of universities. They do provide some insight into the problems of structural arrangements and decision making under a section where power is discussed. Their findings are that actual behavior reflected "a kind of lawlessness consisting of vague and incomplete rules and ambiguous and uncodified procedures." In their findings the lack of specificity in structural arrangement and definition of position and role behavior accounts for the high incidence of conflict reported.[29]

Twelve years later little difference is noted between the earlier Caplow-McGee study and the more definitive study of departments by Dressel, Marcus and Johnson. If "loose-lying" power is the best structural statement researchers can make about our present colleges and universities, perhaps Jenck and Riesman are correct in considering them as institutions rather than formal organizations.[30]

This unique dualism of control is an entrenched aspect of higher education. No present structural arrangements resolve the problem of administrative authority and professional integration in higher education.[31]

Lunsford concentrates on the study of administrators whose time he says is exclusively dedicated to institutional support and coordination of separate groups on

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[28]Earl J. McGrath, Liberal Education in the Professions (New York: Teachers College, Columbia University, 1959), p. 142.

[29]Theodore Caplow and Reece McGee, Jr., The Academic Market Place (New York: Basic Books, Inc., 1958), p. 142.

[30]Paul L. Dressel, F. Craig Johnson, and Philip M. Marcus, The Confidence Crisis (San Francisco: Jossey-Bass, Inc., 1970), p. 248.

[31]John Carson, Governance of Colleges and Universities (New York: McGraw Hill, 1960), p. 18.

the campus.[32] Little research is found on professional roles as related to total college structures.

Historically organization in higher education has been a "post hoc" adjustment to the development of specialities within campus departments. Gouldner's analysis of a small college demonstrated that among professionals there was a genuine bifurcation of interests and identification within a small supposedly homogeneous faculty.[33]

In 1933, Charles H. Judd of the University of Chicago commented that much of college organization followed no recognized or accepted principles and had been done "blindly."[34]

Axelrod proposes that we resolve the dilemma of dual structures and growing complexity by resorting to the medieval device of creating colleges within colleges, decentralized units with high autonomy and great freedom for faculty.[35] The present trend to smaller residence colleges on larger campuses as at Santa Cruz and Michigan State follow this pattern.

Ayres and Russel found most universities and colleges operate without organization charts. Those who use them failed to keep them current. Much of the current confusion arises in their evaluation from a basic lack of established channels of information flow and defined responsibility.[36]

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[32]Terry F. Lunsford, ed., The Study of Academic Administration (Boulder, Colo.: Western Interstate Commission on Higher Education, 1963).

[33]Alvin Gouldner, "Cosmopolitans and Locals: Toward an Analysis of Latent Social Roles," Administrative Science Quarterly, 1 (1957), 281-306 and 2 (1958), 444-480.

[34]Charles H. Judd, Problems of Education in the United States (New York: McGraw Hill, 1933), p. 65.

[35]Joseph Axelrod, "New Organizational Patterns in American Colleges and Universities," in Lewis B. Mayhew, Higher Education in the Revolutionary Decades (Berkeley, Calif.: McCutchan, 1947), p. 174.

[36]Archie R. Ayres and John H. Russel, Internal Structure (Washington, D.C., U.S. Department of Health, Education, and Welfare Bulletin, No. 9: U.S. Government Printing Office, 1962), p. 72.

Organizational Studies of the Two-Year Colleges

Guidelines for establishing a two-year college published by the Department of Health, Education, and Welfare do not mention plans for the internal structure of these colleges.[37]

Medsker looks at the comprehensive goals of the two-year college and decides that as Clark suggests, the flood of transfer students distorts occupational programs. Two-thirds of the students in his study were enrolled in transfer programs, but only one-third progress beyond the junior year.[38]

Studies of social roles in two-year colleges have examined faculty, student, trustee, and president's role performance. Generally these studies assume that proper role performance insures organizational success and ignores structural arrangements.

Garrison's two-year study of faculty in two-year colleges is an impressionistic polemic rather than a substantive contribution.[39]

The role of the college president is discussed in prescriptive length by Cohen and Roueche without mentioning how this role relates to organizational structure. Such prescriptive role analysis studies seem to rest on the Confucian dictum that if the leader acts with recitude the organization functions smoothly.[40]

A careful study of faculty found that unless the goals of the two-year college are clearly defined the two-year faculty does not function effectively. Belief and personality characteristics as well as prior training were often antagonistic to goals of the two-year college.

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[37] D. G. Morrison and S. V. Martorana, Criteria for Establishment of Two-Year Colleges (Washington, D.C.: U.S. Government Printing Office, 1960).

[38] Medsker, op. cit., p. 112.

[39] Roger H. Garrison, Junior College Faculty (Washington, D.C.: American Association of Junior Colleges, 1947).

[40] Arthur M. Cohen and John E. Roueche, Institutional Administrator or Educational Leader? (Washington, D.C.: American Association of Junior Colleges, 1969).

Bower demonstrated that older educational patterns predominate with little emphasis given to innovation or change. She found the activism and specialization of the present campus climate most influential in redefining the role of the faculty in higher education.[41]

More attention has been devoted to the problem of academic rank for faculty than for any other structural problems. This was in most cases initiated by administrators in an effort to gain status for the two-year college.[42]

A recent study of student roles produced empirical evidence to substantiate the "cooling out" assertions of Clark. Most students came from the second, third and lowest quartiles of high schools. Sixty-three per cent work as opposed to 35 per cent of senior college students and one-third are over 19 years of age.[43]

Comments regarding the administration of the colleges usually attack problems of facilities, finances, legal relationships, business management, and relations with community groups.

More than 5 per cent of the two-year colleges were found to be without written policies or job descriptions. Sixty-two per cent of the presidents do not make a formal annual report to any group.[44]

Considerable attention is devoted to a definition of the functional areas which must be provided for in a two-year college organization chart. Board of trustees, financial operations, physical plant, and educational activities were the usual divisions in the earlier literature.[45] No one had seriously investigated the actual behavior of these colleges in structuring their activities

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[41] Florence Bower, Personality Characteristics of College and University Faculty (Washington, D. C.: American Association of Junior Colleges, 1968), p. 66.

[42] Clyde E. Blocker and Wendell Wolfe, "Academic Rank in the Two-Year Colleges," in Junior College Journal, XXXIV (April, 1964), 19-20.

[43] K. Patricia Cross, The Junior College Student (Princeton: Educational Testing Service, 1968).

[44] Cohen and Roueche, op. cit., p. 23.

[45] James W. Thornton, The Community Junior College (New York: Wiley, 1960), p. 128ff.

until a recent effort by the University of California Research Center.

Transfer programs, semi-professional or occupational programs, remedial programs, and community service or adult education programs are mentioned more frequently in current journal articles reporting functional developments.[46]

A recent study of multi-campus two-year colleges under the direction of the Center for Research and Development in Higher Education provides the clearest expression of organization concern in the literature:

> Organization is the channel, or series of channels, through which authority flows from top to bottom and through which information and suggestions flow from bottom to top.

Rourke and Brooks point out that a cabinet type of organization is replacing or altering the traditional executive role of the president.[47] As the press for consensual decision structures accelerates, Goldhammer argues that an administrator must be a "clinician of human behavior."[48]

Originally multi-campus two-year colleges were operated by urban or large school districts. Recently in Pennsylvania, Hawaii, and Virginia a state-wide college is established under a president or chancellor with a director on each campus.[49] Presently developing two-year colleges are more centrally organized than the older systems where local colleges were virtually autonomous.

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[46]Blocker et al., op. cit., p. 179ff.

[47]F. E. Rourke and Brooks, The Managerial Revolution in Education (Baltimore: John Hopkins, 1966), p. 112.

[48]Goldhammer, "Implications for Change in Training Programs," in Knowledge, Production, and Utilization in Educational Administration (Columbus, O.: Center for Advanced Study of Educational Administration), Chapter VII.

[49]Frederick C. Kintzer, Arthur Jenson, and John S. Hausen, The Multi-Institution Junior College District (Washington, D.C.: American Association of Junior Colleges, 1969), p. 18.

Formal Organizational Studies.--Complex or formal organizational studies focus on organizations deliberately established for stated purposes. Their network of social interactions referred to as structure is a central concern of this study.

While there are consistent references to colleges and universities in the organizational literature few empirical studies exist. More studies have been undertaken "in" higher education than studies "of" higher education. Its accessibility as a research site rather than a major concern with its total organization explains why the literature is discontinous.

Parkinson's satirical "law" reflects a popular opinion that the parasitic administrative group increases disproportionately with any increase in work or effectiveness.[50]

This sort of assumption found some support in earlier studies which directly related the growth of size and administrative components.[51] A study of school districts in California confirmed the popular idea that there is a proportionate increase in the growth of the administrative component even though the relation between size and administration growth was small.[52]

Subsequent research on the phenomenon of bureaucratization found an inverse relation between size and personnel assigned to administrative functions. Another study of German industrial patterns evidenced the same trends.[53]

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[50]C. Northcote Parkinson, Parkinson's Law and Other Studies in Administration (Boston: Houghton Mifflin, 1957), p. 8.

[51]Seymour Melman, "The Rise of Administration Overhead in the Manufacturing Industries of the United States, 1899-1947," in Oxford Economic Papers, No. 3 (1951), 64-66.

[52]Frederick W. Terrain and Donald L. Mills, "The Effects of Changing Size upon the Internal Structure of Organizations," in American Sociological Review, XX (1955), 11.

[53]Alton W. Baker and Ralph C. Davis, Ratios of Staff to Line Employees (Columbus: Bureau of Business Research, Ohio State University, 1954), p. 15; Richard Bendix, Work andAuthority in Industry (New York: Wiley, 1956), p. 22.

Haire did a quantitative study of four industrial firms and found that total growth resembled a smooth logarithmic curve. By dividing the supervisors from employees he found that as employee growth increased the ratio of supervisors declined.[54] Subsequently this data was re-analyzed and his findings challenged leaving the issue still clouded.[55]

Anderson and Warkov found an inverse relation between size of hospital and administrative staff in Veteran's Hospitals. They point out that task complexity and the number of locations where tasks are performed are significant variables when examining structural growth patterns. They suggested that in the Terrian and Mills study larger school districts, the increased complexity and geographical spread, were more significant than size increases in increasing administrative size.[56]

When these concepts were tested in higher education a curvilinear relationship was observed. In the initial growth of colleges and universities the administrative components increased, decreasing with further growth. When physical facilities are dispersed supervisory personnel increased.[57]

When the variable of complexity was examined in 54 organizations researchers found that size and complexity were not directly related. They did find an increase in hierarchical levels for larger organizations. Findings here suggested that a decision to increase functional complexity may result in an increase in organizational size rather than complexity being a consequence of growth alone.[58]

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[54]Mason Haire, "Biological Models and Empirical Histories of the Growth of Organizations," in Mason Haire, Modern Organization Theory (New York: Wiley, 1959), p. 292.

[55]Jean Draper et al., "Testing a Model for Organizational Growth," in Human Organization, XXII, No. 3 (Fall, 1963).

[56]T. R. Anderson and S. Warkov, "Organizational Size and Functional Complexity," in American Sociological Review, XXVI (February, 1961), 23-38.

[57]Amos Hawley, W. Boland, and M. Boland, "Population Size and Administration in Institutions of Higher Education," in American Sociological Review, XXX (April, 1965), 252.

[58]Richard T. Hall, J. Eugene Haas and Norman Johnson, "Organizational, Size, Complexity, and Formalization," in American Sociological Review, XXXI, No. 4, 903.

These studies present some methodological difficulties in that the measures of size vary between studies. Professional staff and their competence level is another variable which relates with task complexity and need for supervision.

Administrative duties of an informal or part-time nature were difficult to measure in smaller organizations. As size increases secretaries and other staff assume duties previously defined as administrative.

A re-analysis of these findings by Raphael suggests that when size is held constant, variations in complexity are directly related to increased administrative positions.[59] Lindenfeld's study of national school districts found that increasing the number of work locations required an increased administrative component.[60]

Such contradictory findings suggest that size and complexity are not normally distributed in the universe under consideration. More descriptive studies are needed before these hypotheses may be extended.

The organizational structures of 40 public universities with enrollments exceeding 10,000 were studied by Anderson and Chambers. Their major concerns were the rewards of title and salary assigned to the various statuses. A secondary objective was to define new areas within the university such as audio-visual, institutional research, and computer services. They conclude that unless the structure is carefully designed some areas or functions clearly evidence neglect and fall behind the national norms when salary levels are used as indicators.[61]

The significance of new functions and the importance of their location in the organizational structure of the two-year colleges is well understood. As these

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[59]Edwin E. Raphael, "The Anderson Warkov Hypotheses in Local Unions," in American Sociological Review, XXXII, 768.

[60]Frank Lindenfeld, "Does Administration Staff Grow as Fast as Organizations?" School Life, XXXXIII (1961), 20-23.

[61]D. J. Anderson and J. A. Chambers, "Planning for Organizational Growth," in College Management (September, 1968), also (University of South Florida, Mimeographed Report, 1969).

colleges have grown occupational education, general education, student personnel services, and remedial programs have been centers of controversy. Harris, a leading proponent of occupational programs, states that unless the occupational dean reports directly to the president the career program is "second class."[62] Presently unless community service programs have a full-time director or dean who reports directly to the president, funding is difficult.

Starbuck considers the problems which an organization chooses to confront to be an excellent indicator of its age and survival capacity. In his view formal organizations do not evolve structures which maximize individual or informal flexibility. In contrast Faunce found more democracy in local unions with large membership when compared to smaller locals.[63]

Ayres and Russel investigated the span of control of the president in 600 colleges and universities in relation to the functions of the college. They found that the growth of these organizations had not resulted in structural adjustments which were capable of maintaining effective communications. Too many officers were included in the president's span of control of the two-year colleges.

Academic administration was not clearly identified by colleges in their sample. Important functions in student personnel and planning were often scattered across several departments. There was a significant difference between administrative structures of public and private colleges. Public institutions emphasized positions for institutional development and neglected academic affairs. Private colleges emphasized positions in business affairs and neglected student personnel functions.[64]

When goal structures of universities were investigated, Gross found the mutually exclusive dual goals between faculty and administrators so explicitly stated in the administration of higher education literature did not

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[62]Harris, op. cit., p. 53.

[63]William Faunce, "Size of Locals and Union Democracy," in American Journal of Sociology, IXVIII (1962), 206-298.

[64]Ayres and Russel, op. cit., pp. 68-92.

exist.[65] This contrasts sharply with Lunsford's contention that administrators march to a different beat than faculty and are specialists or professionals with divergent values.[66]

Studies concerned with higher education have generally been concerned with administration as a process and ignored organization or structural problems. Studies of the two-year college have followed these concerns and focused upon role and functional analysis studies. When organizational designs are studied in the two-year college literature state control and state wide structures rather than college internal structures are under analysis.

Formal organization studies of higher education test bureaucratic theories or focus on the ratio of administrative positions for various sizes and types of organizations. No definitive set of findings emerges from these studies of colleges and universities.

Complexity is mentioned, but seldom included as a variable under consideration.[67]

A Theoretical Perspective.--The growth of two-year colleges and their development in recent years suggests that size and age are organizational variables which must be subject to analysis.

Curricular comprehensiveness, which is a common goal explicit in both their legal and philosophical foundations, may be considered as a measure of complexity or effectiveness.

Structurally designed to facilitate the realization of these goals, they can be investigated for examples of centralization, departmentalization, and task differentiation.

While there are other organizational variables which could be drawn on for analysis, size, age, centralization, departmentalization, and complexity provide one

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[65] Edward Gross, "Universities as Organizations," in American Sociological Review, XXXIII, No. 4 (August, 1964), 539.

[66] Terry F. Lunsford, "Authority and Ideology," in American Behavioral Scientist (May-June, 1968), 7.

[67] William A. Rushing, "Two Types of Industrial Administration," in Human Organization, XXVI, 32.

basis for the formulation of an exploratory and descriptive study of their structure and functions.

In Parsons' model the variables of size and age represent adaptive functions, proxies for exchanges between the environment and the organization.

Integration or coordination of internal units is represented by structural variables; the degree of centralization by the combination or bifurcation of the responsibilities for technical and vocational instruction at the second organizational level; the degree of departmentalization at the third level represents the differentiation of organizational sub-units or decentralization of tasks being performed. Another aspect of the structural variable is the size of the administrative component provided to support the integrative functions of the college. These positions will be looked at as intervening variables in relationship to both the organizational size, age, and curriculum complexity.

Goal achievement functions are represented by two variables--the degree of comprehensiveness of curriculum as stated in the catalog, and the degree of size of curriculum.

The relationship between Parsons' theoretical analysis of organizational functions and the selected organizational variables of the two-year colleges may be diagrammed as is shown on the following page.

In addition to these four functional imperatives, Parsons extends his analysis of organizations to the consideration of what he terms "qualitative breaks in the continuity of line structure." Parsons' three levels of hierarchical structure in organizations, institutional, managerial, and technical, may be directly related to the variables under investigation here. The institutional level represented by state and local boards of control have established the goals and objectives of these colleges by law and philosophical statements.[68] The achievement of these goals is then delegated to the two subordinate levels, which Parsons terms the Administrative and the Technical, the foci of this study.[69]

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[68]Donald Singer and John A. Grande, "Emerging Patterns of Governance: Promise or Peril?" in Junior College Journal (March, 1971), 38.

[69]Parsons, op. cit., p. 61.

PARSONS' ORGANIZATIONAL FUNCTIONS	INDEPENDENT VARIABLES	INTERVENING VARIABLES	DEPENDENT VARIABLES
Adaptation:	Age Size		
Integration:		Centralized Dean Second Level Departmentalization Second Level Departmentalization Third Level Administrative Position Size	
Goal Achievement:			Curriculum Size Curriculum Complexity
Latency:[70]			

Two of the variables here under review related directly to the administrative level, the size of the administrative component, and the structural centralization or decentralization of responsibility for the curriculum and instruction. The divisions of labor and complexity at the second and third levels of organization fall under the technical category, where the actual processes of the organization occur.

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[70]Latency or the sustaining of motivation and cultural identity are considered to be a part of this study, but will become investigated at a later time. The study is designed to be a longitudinal one, with the follow-up study comparing administrative and technical structural changes and their relationship to curriculum offerings and complexity after a five-year period of growth and development when the data for 1972 are available.

CHAPTER II

RESEARCH DESIGN AND METHODS

Introduction

The purposes of this chapter are to: (1) establish the relationship between reported research findings and the problems or questions of this study; (2) describe the research procedures; and (3) introduce the analytical strategy.

Originally conceptualized as a descriptive study of organizational structure as the colleges grow and develop, the study has been expanded to include the relationships between structural arrangements and the performance of the organizations in developing a comprehensive curriculum.

Parsons' view of formal organizations as mechanisms for the mobilization of power in modern society and the four functions which he establishes as organizational imperatives provide a frame of reference for organizing and analyzing the variables of this study.[1]

Adaptation, an interaction between the environment and the organization, is conceptualized as exchanges between the two-year colleges and their environment. These are reflected by growth or changes and differences in size and their development or changes across time as indicated by their age. Size and age are treated as independent variables in the formulation of questions addressed to the data under consideration.

Initial questions which an exploratory study of this type should relate to the distribution of the size and age in the two-year colleges are: What are the distributions of size and age of public two-year colleges? Are there regional differences in these distributions? Is there any correlation between size and age distribution? What are the differences between larger and smaller colleges, younger and older colleges, when size and age are compared?

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[1]Parsons, op. cit.

Price has developed a series of propositions which represent the core of what is presently known about formal organizations. These will be used to focus the Parsonian theoretical scheme on more specific aspects of the behaviors under investigation.[2] The following propositions are related to the problem under consideration:

Proposition I. Except where there is a high degree of professionalization, organizations which have a high degree of size are more likely to have a high degree of effectiveness than organizations which have a low degree of size.

Previous studies noted in this context were the Anderson-Warkov series, including the work of Hawley, Boland and Boland as well as the Hall, Hass and Johnson relating size to organizational administrative components in hospitals and colleges.[3] Lazarsfeld and Theilens' study of social scientists in colleges and universities tends to support this proposition.[4]

Co-option is a phenomenon of interaction between the organization and its environment which has received much attention through the work of Selznick and others. It is usually understood as the process of recruiting members with the goal of increasing institutionalization and increases size as a consequence.[5]

The "open door" admissions policy, the egalitarian posture of the colleges, their efforts to make post secondary education economically, socially, geographically, and psychologically available involves increasing recruitment from all segments of the community including the elite. A proposition related to this type of adaptation is formulated:

Proposition II. Organizations which have co-option are more likely to have a high degree of effectiveness than organizations which do not have co-option.

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[2] James L. Price, Organizational Effectiveness (Homewood, Ill.: Irwin, Inc., 1960), p. 8.

[3] Anderson, Warkov, op. cit.; Hawley, Boland and Boland, op. cit.; Hall, Hass and Johnson, op. cit.

[4] Paul F. Lazarsfeld and Wagner Theilens, Jr., The Academic Mind (Glencoe, Ill.: Free Press, 1951), pp. 18-24.

[5] Philip Selznick, TUA and the Grass Roots (Berkeley: University of California Press, 1953), p. 18.

In this sense size is a variable which indicates the number of members enrolled in the process of the college and represents a measure of co-option and institutionalization in its community.

The two-year colleges generally consider that the development of a greater number of career programs requires a larger enrollment, faculty, and capital investment in equipment and buildings. Increases in size are logically related to performance.

In the context of these propositions and related research, the following questions may be explored: Is an increase in organizational size positively related to increased comprehensiveness in curriculum offerings? How is curriculum size related to organizational size?

For this study, curriculum offerings will be viewed as proxies of organizational output or goal achievement that encompass and express organizational goals. A major goal is the development of Career or Vocational curriculum.

In this study, curriculum complexity as expressed in percentage of career curriculum will be used as one indicator of complexity since a major organizational goal involves maximizing this proportion. Total curriculum size is also a measure of complexity for both career and transfer programs. Is there any relation between organizational size and curriculum size as expressed by the number of courses offered? If the transfer programs are limited to the first two years of baccalaureate programs, should the increase of size merely increase the "general education" sections offered, or do the total courses offered increase? Does complexity increase with either age or size? What structural arrangements, if any, increase complexity?

The research by Clark would suggest that as the organization grew older, the need for autonomy became more crucial to its goal achievement. Increasing community pressures which prevented its altering its goals or methods of attaining them actually diminished the number of technical vocational courses offered rather than increased them.

Price summarizes the research in this area with a proposition which suggests another question for consideration in relation to this data.[6]

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[6]Price, op. cit., p. 96.

Proposition III. Organizations which have a high degree of autonomy are more likely to have a high degree of effectiveness than organizations which have a low degree of autonomy.

In looking at the data of this research and the proposition, other questions which should be answered are: Is organizational age negatively related to increased comprehensiveness in curriculum offerings? What is the relationship between organizational size and curriculum offerings or size?

There are other studies and data which modify, if not reverse, this position. Many of the two-year colleges begin as subsidiary organizations within local K-12 school districts. Later they are restructured as autonomous organizations under an independent board of locally elected trustees. These changes in control of the colleges are specifically designed to: expand their autonomy, increase the effectiveness of their comprehensive programs of vocational and technical education, and in some cases, to relieve the constraints of shared facilities. Some of these changes have come about directly as a result of Clark's findings and the implications of his research.

It was previously noted that many of the more recently established colleges were initially controlled centrally by a state system, and gradually assume a more autonomous operation as they grow older.

In order to take into consideration this observed trend to greater autonomy across time, the relationship between organizational age and effectiveness may flow in the opposite direction. Price suggests another proposition which needs to be considered in this context:[7]

Proposition IV. Organizations which have a high degree of legitimacy are more likely to have a high degree of effectiveness than organizations which have a low degree of legitimacy.

Time or age is considered in this instance to be a relatively important variable in the development of community support and legitimacy for these colleges. Survival through time is essential to their existence, since they are directly supported by locally voted tax funds and this establishes their legitimacy. Age as an indicator of their interaction and adaptability coupled with

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[7] Ibid., p. 49.

their philosophical commitment to technical and vocational programs as an organizational goal suggests another question: Is organizational age positively related to greater comprehensiveness in curriculum offerings?

Integration or the coordination of internal units is another function which Parsons utilizes in the consideration of formal organizations. This research focuses on internal structural arrangements of the colleges as an intervening set of variables related to organizational performance.

A major consideration is the division of labor or the degree to which the tasks of a system are subdivided. The allocation of the activities of the organization to various divisions or degrees of departmentalization is often viewed in the perspective of centralized or decentralized control systems. Are there structures which either inhibit or facilitate the functions of these colleges and their goal achievement?

In the literature of the two-year colleges there are strong proponents for each of the operations of the organization. Librarians, Technical-Vocational Deans, and a number of major divisions or departments contend that unless they report directly to the President, their activities and functions are diminished. Does the span of control on the second level continue in present organizational patterns? How are the organizational levels structured? Is the number of levels related to size, or to curriculum size and complexity? Several of the propositions in the Price inventory are related to the problem of structural design:

Proposition V. Organizations which have a high degree of specialized departmentalization are more likely to have a high degree of effectiveness than organizations which have a low degree of specialized departmentalization.[8]

While Simon and those associated with him have made major analytical studies in this area, Chandler explicitly states that the relationship between departmentalization and organizational effectiveness is a causal rather than a correlated relationship.[9] In considering all these statements and data on two-year colleges,

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[8] Ibid., p. 24.

[9] Alfred D. Chandler, Jr., Strategy and Structure (Cambridge: MIT Press, 1962), p. 398.

questions related to their structural arrangements and curriculum comprehensiveness may be formulated.

Centralization of decision making and coordination are other variables related to integration of an organization. Departmentalization may also be viewed as a measure of decentralization of functions and decision making regarding those operations of the colleges.[10]

Another proposition growing out of the research in relation to centralized decision making is:

Proposition VI. Except where there is a high degree of complexity, organizations which have a high degree of centralization with respect to tactical decisions are more likely to have a high degree of effectiveness than organizations which have a low degree of centralization with respect to tactical decisions.[11]

The two-year colleges, it may be argued, exhibit a high degree of complexity because they have a high degree of professionalism. If professionalization is understood as a service orientation, which is dependent upon an abstract body of knowledge, then the colleges fall within the complex qualifications of the proposition. Tactical decisions in this sense are decisions which deal with day-to-day activities, which are necessary for organizational operation. This question takes into account both the relationship of departmentalization and assumes that, in a professioanl organization, decision making at the department level by professionals will increase effectiveness or goal achievement.

Are two-year colleges with a high degree of departmentalization more comprehensive in course offerings than two-year colleges with a lesser degree of departmentalization?

It has been asserted by the proposition that not only is departmental separation related to goal achievement and curriculum comprehensivity, but that these vocational and technical departments must have a separate position at the second level where so-called strategic decisions are made. Price draws on the research for another proposition which relates to this problem:

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[10]Peter F. Drucker, Concept of the Corporation (Boston: Beacon Press, 1960), pp. 121-127.

[11]Price, op. cit., p. 60.

Proposition VII. Organizations which have the maximum degree of centralization with respect to strategic decisions are more likely to have a high degree of effectiveness than organizations which do not have a maximum degree of centralization with respect to strategic decision making.[12]

Strategic decisions are usually spoken of as policy decisions. In order to determine whether there is any relationship between a centralized position which is responsible for all college functions or a bifurcation of the functions between a vocational-technical dean and a dean of transfer curriculum, we will seek an answer to the question: Do two-year colleges with a centralized instructional dean have greater curriculum complexity than colleges which have multiple positions of curriculum control?

Much attention has been devoted to the relationship between the size of the administrative component and organizational size and functions. For purposes of this research, the administrative component of these colleges is considered as an intervening structural variable concerned with the integrative functions of the organizations. In one sense the size of the administrative component may be utilized as an indication of the centralization of functions or decision making activities which are not accomplished by the departments. In this context, the relationship of the size of the administrative component to the comprehensiveness of the curriculum needs to be considered.

Administration activities, as indicated by the number of administrators, may be related to the goal achievement of the colleges. What is the size of this group? Does it relate to organizational size, age, curriculum growth and complexity? Does administrative size decrease with increased organizational size as Anderson and Warkov suggest; or does it increase with the size of the containing organization as Terrian and Mills found; or is administrative size weakly related to complexity as Hall and Hass suggest? Does the size of administrative component decrease as complexity increases, as Hawley and Boland found in the university? Does administrative size pattern in two-year colleges follow the public school or the university findings?

If the administrator's functions and decisions are strategic, one question would be, "In two-year colleges, is there a positive relationship between the size of the administrative component and curriculum complexity?"

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[12] Ibid., p. 60.

Summary of Propositions and Research Questions

The inventory of propositions formulated by Price encapsulated the research findings from which the questions of this study are formed. These propositions represent what is known or illustrate what is almost known regarding the variables usually considered in organizational studies.

The propositions related to size, age, and curriculum variables are:

I. Except where there is a high degree of professionalization, organizations which have a high degree of size are more likely to have a high degree of effectiveness than organizations which have a low degree of size.

II. Organizations which have co-option are more likely to have a high degree of effectiveness than organizations which do not have co-option.

III. Organizations which have a high degree of autonomy are more likely to have a high degree of effectiveness than organizations which have a low degree of autonomy.

IV. Organizations which have a high degree of legitimacy are more likely to have a high degree of effectiveness than organizations which have a low degree of legitimacy.

The questions of this study related to size and age are:

1. What is the range and distribution of size and age in public two-year colleges?

2. What is the range and distribution of curriculum size and complexity in public two-year colleges?

3. Is an increase in size or age related to an increase in either curriculum size or complexity?

4. What is the range and distribution of faculty size and its relation to size and age?

5. Are there regional differences in size, age, and curriculum?

Propositions related to centralization and departmentalization are:

V. Organizations which have the maximum degree of centralization with respect to strategic decisions are more likely to have a high degree of effectiveness than organizations which do not have a maximum degree of centralization with respect to strategic decision making.

VI. Except where there is a high degree of complexity, organizations which have a high degree of centralization with respect to tactical decisions are more likely to have a high degree of effectiveness than organizations which have a low degree of centralization with respect to tactical decisions.

VII. Organizations which have a high degree of specialized departmentalization are more likely to have a high degree of effectiveness than organizations which have a low degree of specialized departmentalization.

Questions related to centralization and departmentalization are:

6. What is the range and distribution of administrative size, and centralized curriculum control in public two-year colleges?

7. What is the range and distribution of departmentalization and operational levels in public two-year colleges?

8. What is the relationship between administrative size, centralized curriculum control and curriculum size and complexity?

9. What is the relationship between operational levels, departmentalization and curriculum size and complexity?

Methods

This is clearly an ex post facto research effort and, as such, needs to maintain safeguards which avoid the inherent possibility of an analysis which falls into the "post hoc, ergo propter hoc" fallacy.[13]

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[13]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart & Winston, 1965), p. 360.

The exploratory and descriptive objectives of this study as well as its ex post factor procedure preclude any "control" in the classical sense as well as any serious statements of casualty.

Despite the limitations of ex post facto procedures, when the objectives of this research are considered and the questions posed reviewed, the data is capable of yielding insights into the relationships being examined if proper caution is exercised.[14]

These findings will provide the same guidelines needed for the development of testable hypotheses. In this way the major objectives of the study reflect the purposes of ex post facto research and studies based upon available materials.

Because the variables have already occurred we look at the independent and dependent variables simultaneously and in retrospect attempt to determine their relationships. Curriculum size and curriculum complexity as dependent variables are investigated and efforts are made to describe and evaluate plausible relationships with the independent and intervening variables.[15]

Enrollment size is considered an independent variable because of its unique position in the two-year college activities.

Size, as indicated by enrollment, is considered as an independent variable because of its relationship to the fiscal policies and the open door philosophy of the two-year colleges. Usually in higher education enrollment size is projected, budget appropriated, faculty hired, and students admitted accordingly. This is not the case in two-year public colleges.

Sixty per cent of two-year college income is from a combination of state support and student tuition which is determined on a per capita basis. Open admissions limit these colleges in predicting enrollment size. Generally the admissions door is "open" through the first few days of classes. This, in turn, generates new revenue and part-time faculty are hired as classes are added to accommodate the students. In some cases with new colleges part-time faculty outnumber full-time faculty. In the case

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[14] R. Merton, Social Theory and Social Structure (New York: Free Press, 1949), p. 90-91.

[15] William J. Goode and Paul K. Hatt, Methods in Social Research (New York: McGraw Hill, 1952), p. 90.

of two-year public colleges, enrollment size is clearly an antecedent of budget and employment activities. When enrollment exceeds physical plant space, interim space is leased or constructed to meet enrollment requirements.

In classical terms, structural arrangements of the traditional bureaucratic type, horizontal and vertical divisions are utilized to determine the degree of departmentalization and task differentiation. Measures of centralization and decentralization are sought by looking at the way in which third level functions are departmentalized, and the way in which second level positions are centralized with a combined Dean of Instruction, who is responsible for all curriculum, or a separate Dean of Vocational and Technical Education, who shares these responsibilities and is responsible for all non-transfer curriculum.

The organizational goals selected are those related to providing a comprehensive curriculum. Two measures of goal achievement indicate the behavior of the organizations in relation to these stated goals: the percentage of curriculum devoted to vocational curriculum and the total size of curriculum.

One of the variables under consideration can be manipulated in relation to the other variables. Centralization of curriculum supervision can be determined from the organization charts and the alternate structural arrangements related to the other variables and these results compared. In this instance the data for this variable allows the consequences and characteristics in the other variables to be reviewed. One objective is to determine if data collected by a national survey can be used for research. While these data could have been more efficiently obtained by a survey questionnaire to the colleges, this more restricted method was selected to test the usefulness of such data required from the colleges.

Two of the basic sources were national documents which report on the data gathered in the annual Higher Education General Information Survey conducted by the Department of Health, Education and Welfare. The Educational Directory, Part 3, 1968-1969, provided the information on the size of the colleges, faculty size, and the number of colleges as well as names and addresses of presidents and deans to whom requests for other documents were mailed. The size of the administrative component and the faculty size were verified in another document from Health, Education and Welfare, Number and Characteristics of Employees in Higher Education.

Because of the elaborate pretesting and definitions developed for the survey and the standardization of responses in these reports, chances for reporting errors are reduced. The problem of the delay in time while these reports are published is an obstacle and a negative factor when utilizing them for research.

A number of documents were reviewed to gather the necessary information and formulate these data for the project. Three requests were sent to each of the 613 colleges listed in the 1968 Directory. The President was asked to forward an organization chart for the 1968-1969 period. A catalog for the same year was requested from the Academic or Instructional Dean. The Registrar was requested to provide a schedule for the fall of 1970 in order to check performance as expressed in the catalogue.

The age of the colleges was determined by examining the catalogue. This also provided information on the administrative size and structure which was checked against the organization chart and national reports. In addition, the complexity of the curriculum in relation to the percentage of comprehensiveness was recorded by coding the number of courses listed in transfer and career curriculum.

Schedules provided another type of curriculum data: the actual courses offered. These were considered to be performance indicators of the actual complexity or degree of curriculum comprehensiveness offered by the colleges.

Each organization chart was analyzed and the data for organizational levels, centralization, or multiple positions for curriculum control identified and the number of departments at three levels recorded. Activities and functions at half levels were considered as part of the lower level.

Additional information was available for the sample from state reports in Indiana and Illinois. While there were more than 300 responses available, not all colleges responded with all the documents requested. Some follow-up letters were dispatched and additional documents secured. Full data was finally obtained from 201 colleges, except for the schedules, where 155 of the colleges supplied this information. These proved to be the most difficult data to secure.

Descriptive statistics will be used to indicate the central tendencies, variability, and distribution of the variables under consideration. Sampling statistics will be introduced as needed to indicate confidence intervals for generalizations made from the data.

Contingency tables are used to present, describe, and compare the profile and relationships of the variables.

Pearson's product-moment correlation coefficients will be utilized to indicate the strength and direction of the variable relationships. Some use of rank order correlations coefficients will be used to assist in clarifying the organizational profile.

The Sample

In 1968 there were 613 public two-year colleges in the United States. The Parten formula was used to determine that estimated sample means would be above the .01 confidence interval. According to this formula any sample of more than 92.4 colleges should assure that the sample mean would not deviate more than the estimate standard error from means calculated from a similar sample.[16]

All colleges were contacted with requests for schedules, catalogues, and organizational charts. When incomplete responses were eliminated a stratified sample of 201 colleges, double the level need for a .01 confidence interval and comprising 32.9 per cent of the universe, remains (Table 1).

Representation by states is relatively even with the exception of North Carolina, Wisconsin and South Carolina, where certain anomalies exist. These are under represented because their two-year colleges are primarily technical institutes and are not comprehensive in their curriculum offerings.

Responses from New York and Texas fall below the median of the sample represented. In the case of Washington, Wyoming, and Oklahoma, the absence of organizational charts reduces the numbers included in the sample.

While organization charts were the most difficult to secure in states where two-year colleges are younger, the class schedules proved to be most difficult to secure. Consequently, this is the only information in the sample where full information was not available for all colleges, 155 out of the 201 total.

When regional comparisons are made, 62.6 per cent of the sample data is incorporated in the regional statistics.

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[16] Mildred Parten, Surveys, Polls and Samples: Practical Procedures (New York: Harper, 1950), Chapter 6, pp. 316-17.

TABLE 1.--Two-Year Public Colleges in Universe and Sample.

State	Universe No.	Universe %	Sample No.	Sample %	Per Cent Sample is of Universe
Alabama	15	2.4	7	3.5	46.7
Alaska	1	0.2	--	--	--
Arizona	8	1.3	3	1.5	37.5
Arkansas	2	0.3	1	0.5	50.0
California	84	13.6	41	20.5	49.2
Colorado	8	1.3	4	2.0	50.0
Connecticut	12	2.0	3	1.5	25.0
Delaware	1	0.2	1	0.5	100.0
District of Columbia	1	0.2	--	--	--
Florida	27	4.4	15	7.4	57.5
Georgia	12	2.0	4	2.0	33.3
Hawaii	1	0.2	1	0.5	--
Idaho	2	0.3	--	--	--
Illinois	33	5.5	26	13.0	78.9
Indiana	1	0.2	--	--	--
Iowa	14	2.3	2	1.0	14.3
Kansas	18	2.9	6	3.0	33.3
Kentucky	1	0.2	--	--	--
Louisiana	1	0.2	--	--	--
Maine	0	--	--	--	--
Maryland	12	2.0	4	2.0	33.3
Massachusetts	16	2.4	4	2.0	26.7
Michigan	28	4.6	15	7.2	53.7
Minnesota	17	2.8	5	2.5	29.4
Mississippi	17	2.8	5	2.5	29.4
Missouri	10	1.6	4	2.0	40.0

Montana	2	0.3	2	1.0	100.0
Nebraska	7	1.1	3	1.5	42.9
Nevada	0	--	--	--	--
New Hampshire	3	0.5	--	--	--
New Jersey	12	2.0	7	3.5	58.3
New Mexico	2	0.3	--	--	--
New York	42	6.8	8	4.0	19.0
North Carolina	40	6.6	3	1.5	7.5
North Dakota	4	0.6	--	--	--
Ohio	5	0.8	2	1.0	40.0
Oklahoma	11	1.8	1	0.5	9.1
Oregon	12	2.0	4	2.0	33.3
Pennsylvania	13	2.1	6	3.0	46.1
Rhode Island	1	0.2	--	--	--
South Carolina	9	1.5	4	2.0	44.4
South Dakota	0	--	--	--	--
Tennessee	5	0.8	1	0.5	20.0
Texas	40	6.5	5	2.4	12.5
Utah	1	0.2	--	--	--
Vermont	1	0.2	--	--	--
Virginia	13	2.1	1	0.5	7.7
Washington	22	3.6	2	1.0	9.1
West Virginia	1	0.2	--	--	--
Wisconsin	19	3.1	1	0.5	5.3
Wyoming	6	1.0	--	--	--
	613	100.0	201	32.9	

N = 201

The distribution between size levels represents a narrow range with only a 7 per cent difference between size categories. This assures that the comparisons are based on homogeneous size strata (Table 2).[17]

TABLE 2.--Organizational Size Distribution.

Size	N	Percent
5000 +	52	25.8
2501 - 5000	43	21.6
1001 - 2500	58	28.8
0 - 1000	48	23.8
Total	201	100.0

Terminology

Size

Total student enrollment as reported to the Department of Health, Education and Welfare will be used rather than the widely used Full-Time Equivalent figure. This is especially important for two-year colleges that serve large numbers of students who take only one or two courses, yet require an almost equal number of services as a student who carries more courses.

Age

This date will be the date they came into existence under their own Board of Trustees. Some were established earlier under local school boards, but their functions within the full definition were not realized until they were autonomous. This eliminates variance in reporting, noted in the HEGIS reports, and is determined from the college's catalogue.

Administrative Size

As reported on the HEGIS survey, which requires all persons who devote more than 50 per cent of their time to administration, to be listed as administrative personnel.

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[17] Claire Selltiz and Marie Jahoda et al., Research Methods in Social Relations (New York: Holt, Rinehart & Winston, 1962), p. 528.

Second Organizational Level

The second horizontal level under the chief administrative officer.

Third Organizational Level

The third horizontal level under the chief administrative officer.

Departmentalization

The categories or separate groups identified on either the second or third organizational levels.

Centralized Curriculum Supervision

A combined Dean or Vice President for the Liberal Arts or College transfer curriculum and Vocational Technical Curriculum is assumed by one position, this term will be used.

Multiple Curriculum Supervision

Separate Vocational-Technical Dean with responsibility for the Technical or Vocational program or curriculum is divided or separate from the Transfer or Liberal Arts curriculum, this term will be used.

Curriculum Comprehensivity or Complexity

An index of curriculum composition expressed by percentage of programs which are either Technical or Vocational and are not Transfer or Liberal Arts courses per se. Total size is also an indicator of complexity.

Effectiveness

Is considered to be the degree of goal achievement. In classical studies, this has been a central concern. In this study, curriculum and complexity will be the dependent variables used as proxies of organizational output.

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[18]Amitai Etzioni, Modern Organizations (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964), p. 8; Peter M. Blau and Richard W. Scott, Formal Organizations (San Francisco: Chandler Publishing Company, 1962), pp. 3-8.

CHAPTER III

RESEARCH FINDINGS

Organizational Size, Age, Curriculum Size, and Complexity

Introduction

In order to relate the data of the sample to the questions raised in this research, the characteristics and limitations of the variables need to be clearly established. This section focuses on the independent variables of size and age and the dependent variables, curriculum size and complexity.

Size and age are capable of being measured in units which provide comparable units for descriptive and analytical efforts to explore some of the organizational characteristics of two-year public colleges. Curriculum size and complexity are believed to be organizational correlates of the independent variables, size and age, which represent one qualifiable aspect of goal achieving activity.

Size is the most frequently cited characteristic of the two-year colleges by scholars of higher education when commenting on this emerging phenomenon. The tendency to equate size and importance, or size as proof of excellence, must result from assumptions that increased size is positively related to achievement of the organization's goals.

Size is often an assumed consequence of the internal activities of an organization, an indicator of progress, either a means or consequence of goal attainment.[1]

Procedures

The information needed to supply answers for the research queries directed to the data of the sample is presented by contingency tables. Descriptive statistical

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[1]William H. Starbuck, "Organizational Growth and Development," in March, op. cit., p. 452.

techniques are used to present the data for comparison and correlation.

Contingency tables were originally drawn up to provide for seven size categories. When the sample distribution was reviewed, four major categories used by other studies of colleges proved adequate.

In the case of each variable original contingency tables were drawn up which provided for the widest possible display of the data and then reformed with only the categories necessary to adequately represent the data.

One criterion for independent variables is that they have no correlation with one another. When size and age were correlated the coefficient which results ($r = .163$) is so weak that it can be attributed to chance rather than being assigned any place in the confidence interval ($P = .01 = .180$).

Organizational studies related to organizational morale and efficiency have elected attitudes, gross sales, or other indices to operationalize a measure of organizational output or goal achievement. Curriculum size and complexity are used more as proxies for organizational goal attainment.

The goals of Counseling and Community Services programs are not reflected in either catalogue or schedule course descriptions and are not considered as a part of this study. The proposed courses and courses offered in transfer curriculum, the Liberal Arts and Sciences and Career courses may be used as an operational measure of these two organizational goals. Thus, two of the four goals of two-year colleges may be examined by utilizing courses offered as proxies.

These proxies for educational outputs more clearly reflect organizational performance than graduates, certificates granted, or transfer students to four-year colleges. Two-year college students are eclectic in their choice of courses, completion of graduation requirements, and time sequences. The courses offered by catalogue statements and schedules are treated as dependent variables related to the growth and development as expressed by size and age in these organizations.

When the difference between the number of graduates who actually receive degrees from two-year colleges is considered in relation to the enrollment, less than 10 per cent of the students are granted Associate degrees or one-year certificates. While courses alone do not

represent the total output of the colleges they are the best available quantifiable proxies for goal achievement in this instance.

Comparative statistics will be used to explore the distribution and differences in course offerings with respect to the percentage of effort directed to the dual goals of supplying transfer and terminal or career programs which require two years or less for completion.

Any attempt to define curriculum falters in the face of the vague statements which assume that the near random series of courses and activities constitute a curriculum. Goodlad insists that the curriculum is "a set of intended learnings," which are rationally planned and are capable of being evaluated.[2] This is compatible with the idea that formal organizations are rationally established means for achieving stated goals.

Curriculum complexity is expressed as the ratio or percentage of the total curriculum devoted to career or vocational programs and by total curriculum size.

Findings

Size.--Small colleges with enrollments of 1000 or less account for 23 per cent (48) of the sample, while medium size colleges (1001-2500) account for 28 per cent (58) of the total distribution. Medium-large colleges (2501-5000) are the smallest category of the sample with 21.6 per cent (43), and the largest colleges (5000+) accounted for the remaining 25.8 per cent (52). These four categories, because of their relative balance, are used for analytical purposes (Table 3).

Size as inidicated by enrollment ranges from 165 in an Alabama college to 29,375 at Miami-Dade in Florida. The wide range in size, which includes the largest two-year college in the population, is most interesting in the wide variation between the sample mean of 4607 and the median of 2306. Miami-Dade enrolls more students than the first 45 colleges, while enrollment in the largest six colleges, or top 3 per cent, exceeds the total for all colleges below the median.

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[2]John I. Goodlad and M. N. Richter, The Development of a Conceptual System for Dealing with Problems of Curriculum (Los Angeles: University of California IDEA, 1966), pp. 13-14.

TABLE 3.--Distribution by Size and Age.

Enrollment Size	Age				Total	Percent	Mean Size	Mean Age
	0 - 10	11 - 25	26 - 50	50 - 75				
5,000 +	17	16	12	7	52	25.8	10,679.2	24.9
2,500 - 5,000	22	9	6	6	43	21.6	3,780.9	19.4
1,001 - 2,500	37	10	6	5	58	28.8	1,656.6	14.8
0 - 1,000	24	2	19	3	48	23.8	659.2	20.9
Totals	100	37	43	21	201	100.0	4,067.0	19.8
Per cent	49.7	18.5	21.6	10.2		100.0		

Size:	Mean	4,067.000
	Median	2,306.000
	Standard Deviation	4,491.860
	Standard Error	316.832
	Kurtosis	5.358

Problems of symmetry and skewness raised by the difference between organizational size median and mean are best examined by utilizing the Pearsonian coefficient of skewness.

The distribution tends to be narrow and humped, rather than normally curved, which a value of three would indicate.[3] When the kurtosis or peakedness value of 5.358 is considered, this is confirmed. One standard deviation to the left includes all of the cases under the mean while three standard deviations to the right account for all except two cases above the mean.

A related aspect of the size or growth profile of interest is the way faculty size relates to organizational size (Table 4).

Faculty size ranges from a low of 15 to a high of 955. The mean size for the sample is 156.5. In this case there is again a wide range as indicated by the median which is 107.

The correlation coefficient ($r = .798$) indicates that the growth of faculty is positively related to increased organizational size ($P.01 = .180$).

An analysis of the faculty-student ratios by organizational size indicates that there is a much lower faculty-student ratio in the smaller colleges. In colleges enrolling less than 1000 students where the mean size is 659.0, the mean faculty size is 37.2, and produces a student-teacher ratio of 16.6 students for each faculty member. In contrast, the colleges whose enrollment exceeds 5000 students have a mean size of 10,679 with a faculty mean size of 342.7. This results in a student-faculty ratio of 30.4 (Table 5).

Organizational Age.--The two-year college is generally believed to be a recent phenomenon. Age distribution indicates that only 10.4 per cent (21) are more than 50 years of age. There are 21.6 per cent (43) over 25 years old. Their youth is confirmed by the finding that 49.7 per cent (100) of the colleges were established within the past decade (Table 6).

The age distribution ranges from organizations in their first year to an upper age of 71 years. Some of the older colleges existed as Junior Colleges with primary

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[3] M. G. Kendall, The Advanced Theory of Statistics, Vol. I, 5th ed. (London: Charles Griffin, 1952), Chapter 6.

TABLE 4.--Distribution of Organizational Size and Faculty Size.

Size	0 - 50	51 - 150	151 - 250	250 - 500	500 +	Total	Mean $\bar{X}$
5,000 +		4	13	25	10	52	342.7
2,501 - 5,000	2	5	34	2		43	150.1
1,001 - 2,500	7	50	1			58	79.6
0 - 1,000	38	10				48	37.2
Total	47	69	48	27	10	201	156.2

Faculty Size:	Mean	156.274
	Median	101.000
	Standard Deviation	160.545
	Standard Error	11.324
	Kurtosis	6.178
	Skewness	2.286

TABLE 5.--Organizational Size and Comparisons of Means of Faculty Size, Student Size with Student-Faculty Ratios.

Size	Total	Mean Enrollment	Mean Faculty Size	Student-Faculty Ratio
5,000 +	52	10,679.20	342.7	30:1
2,501 - 5,000	43	3,780.90	150.1	25:1
1,001 - 2,500	58	1,656.60	79.6	20:1
0 - 1,000	48	659.00	37.2	16:1
	201	4,067.00	156.2	27:1

TABLE 6.--Organizational Age and Size.

Organizational Age	Organizational Size 0-1000	1001-2500	2501-5000	5000 +	Total	Mean Age $\bar{X}$	Mean Size $\bar{X}$
50 - 75	3	5	6	7	21	54.7	5,731.0
25 - 50	19	6	6	12	43	39.7	3,564.7
11 - 25	2	10	9	16	37	14.9	4,320.0
0 - 10	24	37	22	17	100	4.9	2,908.5
Totals	48	58	43	52	201	19.8	4,067.0

Age:	Mean	19.800
	Median	11.000
	Standard Deviation	18.732
	Standard Error	1.321
	Kurtosis	0.563
	Skewness	0.878

emphasis on the transfer curriculum and have often been assimilated as enabling state legislations provided support for the two-year comprehensive colleges.

While the mean age in the sample was 19.8 years, there was again as with size, a wide difference between this and the median age of 11 years. The distribution of age is bimodal in contrast to the smoother curve of the size distribution.

One hundred and twenty-four colleges are less than 20 years old, while 57 of them are more than 30 years old. Only 19 were established during the 1938 to 1948 period. For colleges established prior to 1938, the mean age is 49.8 years with a median of 47. For the younger colleges established since 1948, the mean age is 6.2 years and the median age is 5 years.

The top 3 per cent, or the oldest six colleges of the sample, have total ages which almost equal the total ages of all colleges below the median.

When faculty size is related to age there is a much different profile than with size. Size doubles for the ages 11-25 with a mean of 241 compared to colleges of less than 10 years which have a mean of 126 faculty. The upper age of the bimodal age distribution finds the colleges between 26-50 years of age have a faculty mean size of 130. Colleges over 50 years old have a mean faculty size of 175. While there is an almost 100 per cent increase in size between the youngest (0-10) category and the 25-50 age group, faculty size increases only by 40 per cent between these categories. There is a significant correlation between faculty size and organizational age (Table 7). The Rho coefficient of .600 is well above the confidence interval (P.01 = .210) for these variables.

Regional Comparisons: Size, Age, Faculty Size.-- When 137 (68.2 per cent) colleges are selected by state combinations to represent regional areas and the means for each region compared, other growth and development profiles are discernable (Table 8).

Comparisons of size between geographic areas provides additional insight into the growth differences between regions. In the western states of California, Arizona, and Colorado the size mean is 6182. Midwestern colleges in Michigan and Illinois are smaller with a mean at 3409. On the east coast, New York, New Jersey, and Massachusetts have a mean of 2781. Florida, Georgia, and Alabama, representing the Southeast, have a larger mean which is 3537. If the largest college in the area,

TABLE 7.--Organizational Age and Faculty Size.

Faculty Size	0 - 50	51 - 150	151 - 250	250 - 500	500 +	Total	Mean $\bar{X}$
Age							
51 - 75	6	8	3	3	1	21	178.1
26 - 50	16	13	6	5	3	43	130.3
11 - 25	3	9	12	9	4	37	241.1
0 - 10	21	52	14	11	2	100	126.1
	46	82	35	28	10	201	156.2

Mean:	156.2
Median	101
Standard Deviation	160.54
Standard Error	11.32
Skewness	2.286
Kurtosis	6.178

TABLE 8.--Regional Comparisons of Size, Age, Administrative Size, Faculty Size, Curriculum Size and Student-Faculty Ratios.

	N	Size	Age	Faculty Size	Admin. Size	Curricula Size	SF Ratio
Western	52	6,182	27.1	203.2	11.8	444.4	30.4
Midwest	39	3,402	16.5	159.3	16.8	266.8	21.3
Eastern	23	2,781	12.7	159.5	27.1	204.3	17.4
Southeast	23	3,537 (2,397)*	9.7	128.6	19.1	242.2	27.6
	137	3,975	16	171.0	17.0	319.6	24.4

N = 137

*If Miami-Dade is considered anomalous.

Miami-Dade, is considered anomalous because its enrollment represents 35 per cent of the total for the area, the mean for the Southeastern states is 2397.

Regional age comparisons indicate that the Western colleges are older with a mean age of 27.3 years. Mid-western colleges are much younger with a mean age of 16.5 compared to the Southeastern mean age of 12.7. Eastern states have the younger colleges where the mean age is 9.7. According to these statistics, most Western states established their two-year colleges in the 1940's, while the Midwest and Southeastern states waited until the early and mid-1950's to initiate their two-year colleges. Eastern region colleges were established in the late 1950's or early 1960's.

There is a strong size-age correlation coefficient for the Southeastern region ($r = .859$, $P.01 = .180$) and for the Eastern states ($r = .577$, $P.01 = .280$).

Mean size of faculty for the regional grouping is 171, well over the 156 of the whole sample.

Student-faculty ratios increase directly with increases in enrollment. Regional ratios tend to follow the same pattern but there are some differences to be noted. Southeastern regional colleges are 40 per cent smaller than Western colleges, yet their student-faculty ratio is only 9 per cent under the larger Western organizations. In contrast, their enrollment is 4 per cent larger than Midwestern colleges yet their ratio is 33 per cent larger.

Curriculum Size.--The range of curriculum size distributes widely between one college which only offers 47 separate courses to an upper limit of 1,620. Only two colleges offer more than 1,000 courses. The mean curriculum size for the sample is 324.4, with the median at 278. This range is not as wide as it appears, for only 13 units separate the mean score from the mode (Table 9). When one standard deviation (216) is considered only 20.8 per cent of the colleges, 142 fall outside this curriculum size range between 108 and 540. Curriculum size is more narrowly distributed than either age or size.

When comparisons are made between organizational size and curriculum size, the small colleges have a mean curriculum size of 204 courses. The largest have 561 courses as their mean curriculum size. Medium size colleges offer 243 courses, and the medium-large colleges have a slightly larger mean curriculum size of 294 (Table 10).

TABLE 9.--Curriculum Size Distribution.

	Curriculum Size						
	0 - 200	201 - 400	401 - 600	601 - 800	801 - 1000	1000 +	
Number of Colleges	42	110	31	12	6	2	201
Mean Curriculum Size	181.3	262.0	348.7	659.4	847.5	1498.0	324.48
Per cent of Total Sample	20.8	54.0	15.2	6.0	3.0	1.0	100

Mean	324.480
Median	478.000
Standard Deviation	216.050
Standard Error	15.230
SK	2.146
Kurtosis	8.137

TABLE 10.--Organizational Size, Curriculum Size, and Complexity.

Size	Mean Courses Offered				Course Distribution			Curriculum Complexity		
	LAS	Business	Tech.	Total	Percent LAS	Percent Business	Percent Tech.	Percent Transfer	Percent Career	N
5000 +	324.4	81.8	155.5	561.5	57.7	14.4	27.9	57.7	42.3	52
2501-5000	189.7	48.5	55.8	294.0	64.5	16.5	19.0	64.5	35.5	58
1001-2500	145.1	46.6	52.1	243.8	59.5	19.1	21.4	59.5	40.5	43
0-1000	137.8	34.0	32.2	204.0	67.5	16.9	15.6	67.5	32.5	48
$\bar{X}$	201.7	53.3	70.1	324.4	64.5	15.8	19.7	64.5	35.5	201

Mean	324.480
Median	278.000
Standard Error	15.230
Standard Deviation	216.050
SK	2.146
Kurtosis	8.137

It is interesting to compare the programs offered in the catalogue, the courses proposed to support these programs, and the courses offered as indicated in the schedule (Table 11).

Small colleges state that 60 per cent of their programs will be career oriented, yet their schedules indicate that 72 per cent of their courses are transfer or pre-professionally oriented and only 28 per cent are career courses.

When college program statements are related to size and age, there is almost no difference in program statements by the large colleges between younger and older colleges (Table 12). In the medium size colleges (1000-2500) the same pattern obtains, but for small colleges the percentage of liberal arts courses increases with age. Medium large colleges in the 11-25 age category have an almost even distribution (54-46 per cent) between career and transfer programs. Most colleges cluster near the mean distribution with the exception of small colleges in their first 10 years of operation.

All two-year colleges, in statements about programs offered, assert that transfer programs comprise 36.5 per cent of their activity and career programs account for 63.5 per cent. In courses offered by catalogue this is reversed; 35 per cent career courses are listed and the remaining 65 per cent are transfer or pre-professional. When schedules are examined, career programs drop to 28 per cent and transfer careers increase to 70.9 per cent.

Organizational age and curriculum growth or size comparisons indicate that curriculum size increases from a mean of 279 courses for colleges in their first 10 years to a high mean of 460 courses for colleges in their first 15 years. In the next 25 years age category, curriculum mean drops to 335 for colleges under 50 years old and 344 for those over 50 (Table 13).

The coefficient for organizational size and curriculum size in rank order correlation is Rho = .788 (P.01 = .210). This is very near the product moment correlation, r = .769 (P.01 = .180) for these two variables.

Age correlations with curriculum size are not as strong as the size correlation. This weaker relationship is indicated by the values of both rank order and product moment coefficients, Rho = .240 (P.01 = .210) and r = .301 (P.01 = .180).

TABLE 11.--Organizational Size and Curriculum Comparisons.

Size	Programs Offered		Courses Offered Catalogue		Courses Offered* Schedule	
	LAS %	Career %	LAS %	Career %	LAS %	Career %
5000 +	42.0	58.0	57.7	42.3	68.6	31.4
2500 - 5000	38.0	62.0	64.5	35.5	75.7	24.3
1001 - 2500	38.0	62.0	59.5	40.5	72.2	27.8
0 - 1000	40.0	60.0	67.5	32.5	72.0	28.0
Mean	36.5	63.5	65.5	35.5	70.9	29.1

*N = 155

Mean	324.4
Median	278.0
Standard Deviation	216.05
Standard Error	15.23
SK	2.146
Kurtosis	8.137

TABLE 12.--Organizational Age, Curriculum Size and Complexity.

	Mean Courses Offered				Course Distribution			Curriculum Complexity		
Age	LAS	Business	Technical	Total	Percent LAS	Percent Business	Percent Technical	Percent Transfer	Percent Career	N
51-75	235.4	48.4	60.2	344.0	68.7	13.9	17.4	68.7	31.3	21
26-50	247.3	41.2	46.5	335.0	74.1	12.2	13.7	74.1	25.9	43
11-25	256.4	61.2	142.4	460.0	56.0	13.2	30.8	56.0	44.0	37
0-10	159.0	59.8	61.2	279.0	56.7	21.5	21.8	56.7	43.3	100
	201.7	53.3	70.1	324.4	64.5	15.8	19.7	64.5	35.5	201

Mean	324.400
Median	278.000
Standard Deviation	216.050
Standard Error	15.230
SK	2.146
Kurtosis	8.137

TABLE 13.--Organizational Size, Age and Complexity of Programs.

Age Size	Curriculum Distribution by Percentages									
	0 - 10		11 - 25		26 - 50		50 - 75		Mean	
	LAS	Career	LAS	Career	LAS	Career	LAS	Career	LAS	Career
5000 +	41	58	45	55	41	59	43	57	42	58
2501 - 5000	42	58	54	46	29	71	34	66	38	62
1001 - 2500	39	61	41	59	32	68	41	59	38	62
0 - 1000	20	80	32	68	39	61	42	58	40	60
Mean Curriculum Size	279		460		335		344		324	
Total	100		37		43		21		201	

Curriculum Complexity.--Career or vocational courses account for 35.5 per cent of the total curriculum in this sample, and the complexity range of difference between the small college at 32.5 per cent and the medium college at 42.3 per cent (the highest of the sample) is slight when the difference in mean size between the large and small colleges ranges from 659 to 10,679 is considered.

The size of career and vocational curriculum is viewed along with curriculum size as a dependent variable.

Complexity, or the percentage of career courses, varies widely in the sample. One college offers only 7 per cent while 93 per cent is offered in the highest case. Only four colleges offer less than 10 per cent career courses, while six colleges offer more than 70 per cent career courses. While a curriculum which is 93 per cent career oriented is not comprehensive neither is one which has only 7 per cent in career fields.

If the sample is divided at the 2,306 median size, the percentage of transfer or Liberal Arts courses for both the larger and smaller groups at 64 per cent is identical. There is one aspect of difference in the 35 per cent distribution of the career programs. In the smaller college category 18 per cent of the career courses offered are in the business field.

In the larger colleges, 37 per cent of the courses are career, but only 16 per cent of these are business courses. Although the change is slight, it is confirmed by the high value of the correlation coefficient ($r = .827$) between technical course size and college size ($P.01 = .180$). The relationship between organizational size and business course size is positive but not as strong at ($r = .544$) as with career courses in general.

In percentage terms, the student in the smaller college and in the larger college would appear to have almost the same opportunity to enroll in career or Liberal Arts courses.

When changes in the curriculum complexity are related to size, the direction of change favors the larger colleges which devote more of the curriculum to vocational courses. Vocational course means are smallest in the small colleges (32.5 per cent), largest in the medium size colleges (40.5 per cent). Medium-large colleges have 35.5 per cent of their courses in career fields, and the largest colleges devote 29.6 per cent of their curriculum efforts to vocational courses.

In the small colleges career programs are almost equally divided between business courses at 16 per cent and technical courses at 15 per cent. This relationship alters slightly as size increases to 16 per cent business courses in medium-large colleges compared to an increase to 19 per cent for the technical. In large colleges, the business offerings drop to 14 per cent while the technical courses grow to 25 per cent.

When age is considered in respect to curriculum complexity, the direction of change in the percentage of courses devoted to career programs between younger and older colleges seems to confirm Clark's San Jose study, where he found that the percentage of Liberal Arts or transfer courses increased and vocational or career courses declined slightly. In this sample the 53 per cent of the curriculum of colleges under 25 years of age is transfer or Liberal Arts, and this increases to 71 per cent for colleges over 25 years of age. Naturally, the vocational courses decrease in these cases from 42 per cent to 29 per cent in the older colleges. It must be kept in mind that Clark only studied a three year period and found career programs dropped from 48 to 26 per cent. These data cover a 70 year range and many of the older colleges have only recently adopted a comprehensive philosophy.

When the curriculum offerings, as expressed in the catalogue, were compared with the actual curriculum performance expressed in the schedules of the colleges--the number of courses actually taught--there was an increase in the number of Liberal Arts courses offered of 8.1 per cent, while the career courses decreased by 6.4 per cent. Complexity decreases from 35.5 per cent in the catalogue to 29.1 per cent when class schedules are examined (Table 11).

The largest colleges in catalogue goal statements offered 42.3 per cent of their courses in career fields compared with 32.5 per cent for colleges of less than 1000. Actual classes taught, however, reduce the difference between larger and smaller colleges to 31.4 per cent for the largest and 28.0 per cent for the smallest. The difference between catalogue statements of complexity (by size) and courses described was almost 100 per cent. The difference between catalogue statements and classes scheduled was 7.1 per cent.

The difference between the performance goals expressed in the catalogue and those realized in the schedule expressed in per cent appears small (5.9 per cent).

However, in relation to career courses available when this is applied to the mean curriculum size, career courses for students are reduced by 20 courses under the catalogue expression, larger colleges will offer 32 fewer career courses but only 12 are lost in the smallest colleges.

In order to check these findings, total library volumes reported in the catalogue were compared with volumes reported on the HEGIS summary and, again, the catalogue statement averaged 2000 volumes higher than the statistics reported to the Federal government.

When the number of career courses is considered, 237 of the larger colleges' 561 total courses are career courses. In the small colleges, 68 of 204 total courses are career oriented. One career course for 28 students is offered in the largest colleges, while the smaller college student is offered one career course for 10 students.

One plausible explanation of this difference is the enrollment preferences of students. Career courses planned often fail to materialize.

Additional obstacles to the development of more comprehensive or complex curriculum are the higher costs for instruction (smaller classes), capital investment (equipment, space), and recruitment associated with career curriculum.

Some of the differences between catalogue and schedule expressions can be explained in that in actual day-to-day operations where there is wide experimentation in the scheduling of career courses. Many are offered under Adult Education or Community Services schedules which are publicized separately and do not conform to the academic or traditional "credit" practices or appear in these data.

Summary

The characteristics of the two-year public colleges in respect to size, age, curriculum size, and curriculum complexity are presented in this chapter.

Colleges were almost evenly distributed by size across the four categories, small 23.8 per cent, medium 28.8 per cent, medium-large 21.6 per cent, and large 25.8 per cent. Mean enrollment size was 4,067, and there is a strong weighting toward the upper end of the distribution.

Size ranges from 165 to 29,375. Median size is 2,306 with the upper 3 per cent of the colleges enrolling more students than all colleges below the median.

Age distribution ranges from 1 to 71 years with a mean of 19.8 and a median of 11 years. Age is bimodal in distribution with mean age for the group under 20 years of age 6.2 and 49.2 years for the older grouping. Half of the colleges have been established since 1957, year of the Sputnik.

Size and age were established as independent variables which their correlation was tested against change ($r = .163$, $P.01 = .180$).

Faculty size is a close organizational correlate of size and weakly related to age. Faculty size ranges from 15 to 955, the difference between the mean size of 156 and the median of 106 reflects the size distribution with which it correlates ($r = .798$, $P.01 = .180$). There is a lower ($r = .353$) correlation to age.

Regional comparisons clearly identify area differences in both size and age. Western colleges are the oldest (27.3 years), while the Eastern colleges are the youngest (9.7 years). Size and age correlations for Southeastern and Eastern states are strong but the largest colleges are in the West and Midwest. Age reflects the different dates of enabling legislation necessary prior to establishing two-year public colleges. Faculty-student ratios do not follow the age size covariance of the areas, but appear to be related to other factors. Curriculum size reflects its close relation with organizational size in each area.

Curriculum size ranges between 47 and 1,620 course offerings. Median and mean sizes are close, 278 and 324 respectively. Curriculum distribution clusters close to the mean. Larger colleges have larger curriculum offerings in a consistent pattern, as the strong ($r = .769$) correlation indicates. Larger colleges offer a greater curriculum complexity than smaller colleges. The strongest correlation between curriculum and size exists in relating size to the technical or vocational segment of curriculum ($P = .685$).

Age correlation with curriculum size is only one-half as strong as size correlation. The age coefficient with total curriculum is $r = .301$, and for technical courses a lower value at $r = .257$. The relation between age and complexity which is just over the .01 level reflects the Liberal Arts philosophy of the older colleges.

Several of the research questions are answered by these data, but the establishment of correlations is not to infer that these are attributes of either size or age. Further investigation would doubtlessly identify other factors which correlate with size and age and might explain the observed differences.

The basic questions related to organizational profiles of size, age, faculty size, curriculum size and complexity may be generally answered from the findings in this chapter.

Although the relationship between organizational size and faculty size is positive and relatively strong, it is peripheral to the major concerns of this study.

External variables, population, industrial activity, economic cycles and geographic factors doubtless influence all the major organizational variables in these data.

TABLE 14.--Correlating Coefficients of Independent and Dependent Variables.

Independent Variables	Dependent Variables	
	Curriculum Size	Curriculum Complexity
Size	r = .769	r = .685
r .163	Rho = .778	Rho = .698
Age	r = .301	r = .257

P.01 = .180 for all product moment (r) coefficients.
P.01 = .210 for all rank order (Rho) coefficients.

Administrative Size, Centralization and Departmentalization

Organizational studies have devoted considerable attention to structural arrangements related to centralization, departmentalization, autonomy, spans of control, and hierarchical designs. This study views these as intervening variables and in this section seeks to establish their profiles and relationships to the major variables.

There are numerous prescriptive suggestions in the two-year college literature proposing "ideal type"

organization charts, and pointing out the crucial importance between structural relationships to functional effectiveness. Little or no empirical evidence is available which confirms these assumptions or sustains their conclusions.[4]

The structural questions about the relation between centralization and departmentalization and curriculum size and complexity involve four intervening variables.

Centralization is considered in relation to administrative size and second level curriculum supervision. The size of the administrative component is used in the usual sense of centralized efforts to coordinate activities and allegedly requires a greater proportion of organizational resources (time, energy, i.e., positions) as organizational size increases.

Another prescriptive or theoretical position considers the organizational commitment of time to planning, organizing, and supervising, as indicated by administrative positions, to have a relationship with the achievement of organizational goals.

On the second organizational level the centralization of curriculum control in a single position or dean is alleged to influence or inhibit the development of career programs or complexity. Centralization is asserted to reduce curriculum complexity or inhibit achieving the goal of greater career offerings.

Departmentalization will be considered in terms of the number of levels and units on each level utilized by the colleges in relation to size, age, curriculum size and complexity. Third level discrete functional units as differentiated and identified by the organizational chart will be the major variable representing departmentalization.

Procedures

Centralization is represented in this study by two variables or indices, administrative size and the control position for instruction and curriculum on the level immediately under the chief executive officer.

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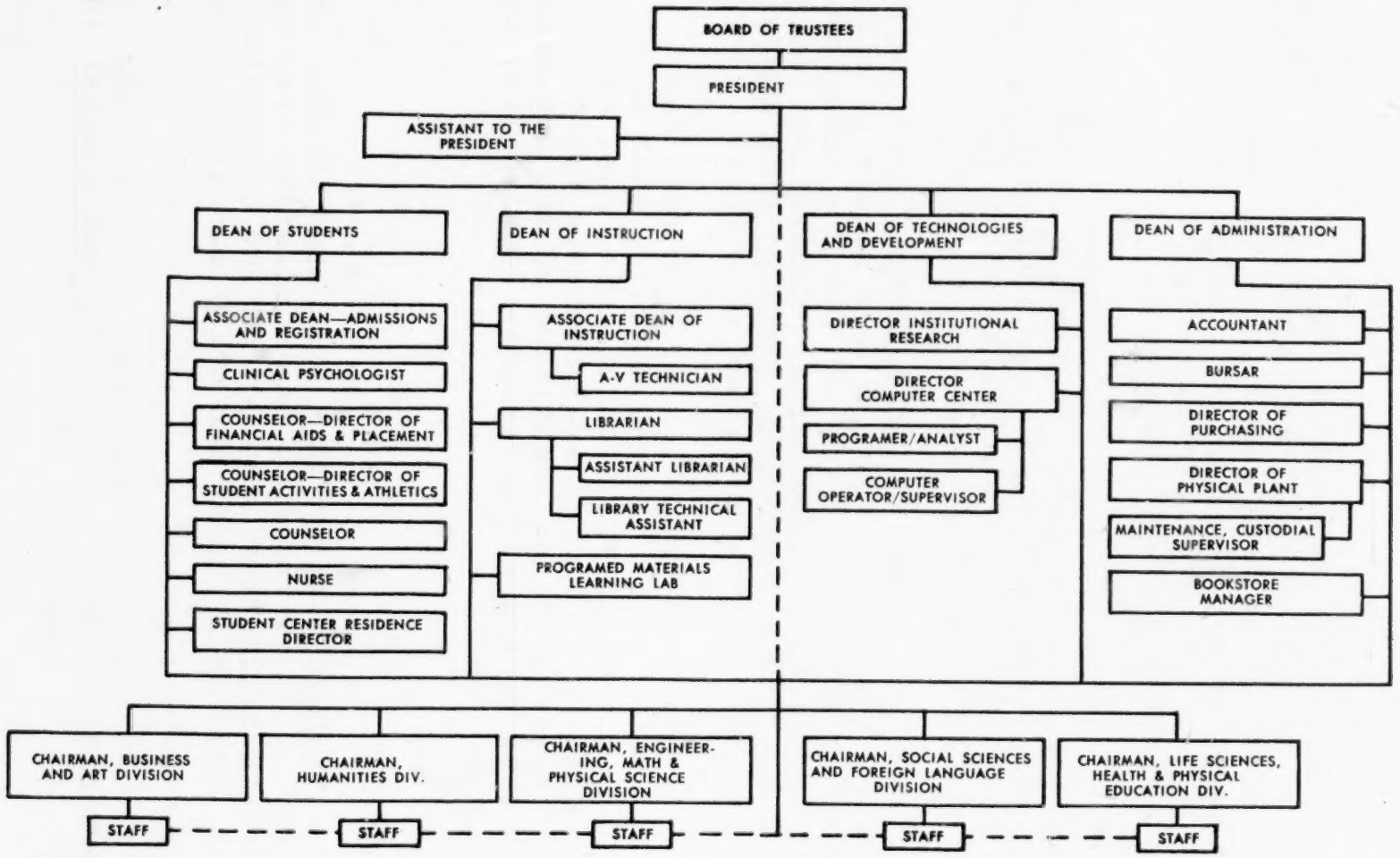
[4]Richard C. Richardson, "Needed: New Directions in Administration," in Junior College Journal (March, 1970), p. 16 (see Table 15).

TABLE 15.--Two-Year College "Ideal Type" Organizational Chart.*



*Proposed by Richard C. Richardson, "Needed: New Directions in Administration," in Junior College Journal (March, 1970), p. 16.

Administrative size is represented by the number of organizational positions devoted to planning, organizing, and supervising operations. Any position which involves more than half of its functions with these activities is assigned to the administrative component.

Centralization of curriculum and instructional control in a single position, or dividing these functions, is a second variable used to indicate alternate structural strategies in the two-year colleges.

Both of these structural variables are assumed to be related to both the size of the curriculum and the complexity of the curriculum. Percentages and Pearson product moment coefficients are used to describe the strength and direction of these covariations.

The division of labor, or departmentalization of these colleges, is viewed in terms of two variables, (1) the number of hierarchical levels used to organize activities and, (2) the number of separate units on each level.

The number of levels for each college was determined from their organization chart. Departments or units on each level were identified from the same document.

These structural arrangements are often considered in classical bureaucratic studies as related to organizational effectiveness or performance. In this study, the number of levels and units on the various levels are related to both the independent variables of size and age and the dependent variables of curriculum size and complexity to determine the strength and direction of their relationships to organizational goals.

Findings

Centralization: Administrative Size and Second Level Curriculum Control.--Size of the administrative component ranges from 2 to 99. Mean size for the sample is 14 with a median of 11. Only 32 or 16 per cent of the colleges reported more than 20 administrators. When considered in relation to size, the mean for the small colleges is 7.7, with a high for the largest college at 20.2. Medium size colleges fall near the mean for all colleges at 14.9 (Table 16).

Administrative size does not relate very closely with age. Colleges over 50 years of age have a mean of 11.1, almost the same as the next younger age group

TABLE 16.--Organization Size and Administration Size.

Size	0-10	11-25	26-50	50 +	Total	Mean	Adm. - Faculty Ratio		Student-Administration Ratio	
5,000 +	9	28	11	4	52	20.2	17:1	.058	534:1	.00187
2,500-5,000	16	18	9		43	16.3	9:1	.111	236:1	.00423
1,001-2,500	30	22	6		58	14.9	5:1	.200	110:1	.00909
0-1,000	35	13			48	7.9	4:1	.239	82:1	.01219
Total	90	81	26	4	201	14.3	9:1		240:1	

Mean	14.3
Median	11.5
Mode	12
Standard Deviation	11.42
Standard Error	.86
Kurtosis	16.54
Skewness	3.19

(26-50) mean of 12.0. Colleges under 10 years old have a mean administrative size of 12.9. Size-mean more than doubles between this and the 11-25 year old group where the mean is 27.1 administrators for these colleges (Table 17).

There is a positive correlation (r = .415) between the size of the colleges and administrative size. Age is less strong but positively related (r = .261).

It is difficult to relate these findings to the Hawley and Boland conclusions that in the universities administrative size tended to decrease at the larger institutions. Administrative size followed a logarithmic curve in relation to enrollment size. In contrast, the Terrian Mills study found that in California public schools, the number of administrators increased as the size of the containing organization increased.

The original data sources were re-examined and compared in an effort to clarify these statistics. Do the two-year colleges follow the findings in higher education or those for the public schools? Upon re-examination it was apparent that in the Higher Education General Information Survey data the larger institutions under-reported their administrative positions when listing them for that publication. They reported only their upper-level positions and failed to record levels which the smaller colleges included.

A check of organization charts and catalogues confirmed this. No attempt was made to go back and add supplementary data since the Higher Education General Information Survey data was selected as the source for this information. The Higher Education General Information Survey instrument on this response required the name and title of administrators rather than a mere report of numbers and this listing was tedious for larger colleges. However, when the mean from these supplementary sources (30.2 for largest colleges) is considered, the two-year colleges' administrative size appears to resemble the public school pattern.

When size and age are controlled and administrative size is related to curriculum size, there is a very limited range from the mean of 814. Administrators in the colleges with less than 250 courses number 13.7; 18.7 administrators in colleges with more than 500 courses; and 15.8 in colleges between these two sizes.

For the organizations with under 10 administrators, the curriculum mean is 252 and there are 6.2 administrators.

TABLE 17.--Organizational Age and Administrative Size.

Administrative Size	Organizational Age						
	0 - 10	11 - 20	21 - 30	31 - 50	51 - 100	Totals	$\bar{x}$ Age
College Age							
51 - 75	7	11	2		1	21	11.1
26 - 50	26	14	2		1	43	12.0
11 - 25	12	11	8	4	2	37	27.1
0 - 10	45	43	5	7		100	12.9
	90	79	17	11	4	201	14.3

Mean	14.3	Kurtosis	16.54
Median	11.5	Skewness	3.19
Mode	12		
Standard Deviation	11.42		
Standard Error	.86		

When the number of administrators increases to a mean of 32.2 for colleges with 26-50 administrators, the curriculum mean increases to 320 (Table 18). These modest covariations raise problems about this centralizing variable and its intervening relationship to curriculum size.

There is a very modest position correlation (r = .218) between administrative size and increased curriculum size. The relationship is just over the .01 level of significance (.180). The rank order correlations are considerably stronger (Rho .357).

Administrative size is much more positively related to organizational (r = .415) than to curriculum size. Again the rank order correlation is stronger (Rho = .558) than the product moment coefficients.

When the strong (r = .769) relationship between size and curriculum size is considered the relation of administrative size to curriculum which is just above the .01 significance level is obviously not very important. In contrast the stronger relation to total organizational size may suggest administrative size is a dependent and not an intervening variable.

The relationship between age and administrative size (r = .261) is only half that of size. While increases in either age and size have some impact on administrative size, increased size relates almost twice as strongly with increases in curriculum size.

The relationship between size of the administrative group and the development of career, occupational and technical curriculum is of major interest. The percentage of curriculum devoted to these programs of study is discussed in this study as curriculum complexity.

When the smaller colleges are compared with the largest, the complexity of curriculum offerings increases from 32.5 per cent to 42.3 per cent (Table 10). Mean administrative size for these colleges increases from 7.9 in the smallest to 20.2 in the largest. However, the correlation between administrative size and curriculum complexity (r = .133) is below the .01 level P = .180 or the .05 level P = .140 of significance (Table 19).

The relationship between administrative size and curriculum size is weak and there is no significant relation between career programs, curriculum complexity and size of the administrative component.

TABLE 18.--Administrative Size and Curriculum Size.

Administrative Size	Curriculum Size 0-250	251-500	500 +	Curriculum Size	Distribution	Percent	$\bar{x}$ Administration
50 +		4		411.0	4	2.0	63.7
26-50	18	4	4	320.0	26	12.9	30.1
11-25	34	33	14	324.0	81	40.5	15.3
0-10	48	31	11	252.1	90	44.6	6.2
Totals	100	72	29	324.	201	100.0	
Percent Distribution	49.7	35.8	14.5				
$\bar{x}$ Administration	13.7	15.8	18.7				14

TABLE 19.--Administrative Size and Complexity.

Administrative Size	Curriculum Complexity 0-25	26-50	50 +	Complexity Percent $\bar{x}$	Admin. $\bar{x}$	Total	Percent
50 +			4	53.7	63.7	4	2.0
26-50	2	20	4	29.5	30.1	26	12.9
11-25	11	50	20	40.9	15.3	81	40.5
0-10	35	49	6	31.0	6.2	90	44.6
Total	48	119	34	38.0		201	
Mean Administrative Size	9.5	13.3	25.9		14.0		
Complexity Mean	17.6	29.8	61.7				
Percent distribution	32.5	54.0	22.5				

N = 201

Complexity:	Range	99	Standard Error	.806
	Mean	14.3	Kurtosis	16.540
	Median	12	Skewness	3.192
	Standard Deviation	11.426		

If there is a substantial under-representation of the total administrative size as indicated, the under-reporting by larger colleges would, in effect, reduce the correlation between administrative size and curriculum size and complexity.

Centralized vs. Separate Curriculum Control.--Another variable believed to have some relationship to the goal achievement of the two-year colleges is the second level (reporting to the chief executive officer) position controlling curriculum and instruction.

These structural arrangements on the second organizational level for curriculum control is of interest because both Norman Harris and B. Lamar Johnston have asserted that second level centralization inhibits functions and goal achievement in the two-year colleges.[5]

Harris contends that unless there is a separate second-level position (dean, director or vice-president) with a responsibility for administering career programs of equal status with the Liberal Arts (dean, director, etc.), the college will not achieve its goals of an increasing career curriculum.

The question then becomes "what is the effect of a centralized dean on the career or vocational curriculum when compared with colleges that assign these activities to a separate dean?"

Slightly more than half of the colleges separate responsibility for vocational or career programs (109 or 54.4 per cent). Centralized responsibility for all instructional programs of the college is elected by 92 (45.6 per cent) of the sample (Table 20).

The relationship between these structural arrangements for the control and growth of curriculum and career programs or complexity is concern of one of the research questions.

Mean curriculum size for the sample is 324 with all of the size categories except the largest reporting a mean curriculum under this figure (Table 10). Mean curriculum size for the largest (over 5,000) colleges is 561.

When the mean curriculum size of 361 colleges utilizing a centralized or single dean is compared to those electing multiple control whose mean is 301, the

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[5]Harris, op. cit., p. 9.

TABLE 20.--Organizational Size, Second Level Centralization Curriculum Complexity and Curriculum Size.

	Centralized Positions			Multiple Positions			Total Distribution		
	Positions	Percent of Total	$\bar{x}$ Complexity	Positions	Percent of Total	$\bar{x}$ Complexity	Size	Total	Percent
	23	11.3	48.7	29	14.6	31.5	5000 +	52	25.9
	31	15.5	39.3	12	5.8	32.2	2501-5000	43	21.3
	24	11.9	46.0	34	17.0	38.6	1001-2500	58	28.9
	14	6.9	28.0	34	17.0	33.6	0-1000	48	23.9
Totals	92	45.6	41.8	109	54.4	31.4		201	100.0

larger curriculum belongs to the former. When organizational size is controlled and curriculum sizes are compared, the colleges electing single curriculum control positions have a larger curriculum in every case (Table 21).

While there is only a difference of 8.8 per cent in the sample between overall choices (54.4 multiple and 45.6 centralized) there is a tendency for the larger colleges to centralize curriculum control. These data may be summarized thus by percentages of the total sample:

	Curriculum Control Centralized	Multiple Curriculum Control
Larger College	26.8	20.4
Smaller College	18.8	34.0
Totals	45.6	54.4

If size is controlled and the colleges are compared on the basis of similar complexity or per cent of career curriculum categories, the two smaller categories are virtually identical when complexity is considered (Table 22). If curriculum size is considered, colleges with a centralized position have larger curriculum except in the category for less than 20 per cent career offerings.

If the percentage of career programs or complexity is examined, similar relationships exist (Table 22). Colleges with a centralized control position report 41.8 per cent career courses, while those with multiple positions have almost 10 per cent less or 31.4 per cent. With the exception of the smallest colleges, those with centralized positions have greater curriculum complexity than those with multiple arrangements.

When a comparison is made between colleges larger than 2,500 students, and those which are smaller, only 18.8 per cent of the smaller colleges use a single position while 34.0 per cent of the smaller colleges use multiple curriculum control positions on the second level. Among the larger colleges (over 2,500) 26.8 per cent use a centralized dean or position, and 20.0 per cent of the larger colleges use multiple positions (Table 20).

Colleges in the medium large category evidence the greatest preference for a centralized dean of curriculum and instruction, with 15.5 per cent of the sample utilizing this structure.

Again the relationship may be summarized by per cent of curriculum devoted to career programs and mean curriculum size.

TABLE 21.--Second Level Centralization and Curriculum Size.

	0 - 250	251 - 500	501 - 750	751 +	Number	
Centralized Dean or Admin. Vice Pres.	38	40	10	4	92	
Mean Curriculum Size	169.6	357.5	633.1	988.7		361.6
Separate Dean	62	32	11	4	109	
Mean Curriculum Size	148.0	338.4	566.7	801.2		301.2

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TABLE 22.--Second Level Centralization and Curriculum Complexity.

Combined Dean or Vice President					Separate Dean or Vice President			
Curriculum Complexity	$\bar{x}$ Curriculum Size	Complexity Career Percentage	Total Distribution Total	Percent	$\bar{x}$ Curriculum Size	Complexity Career Percentage	Total Distribution Total	Percent
40 +	453.0	63.8	33	35.8	378.3	48.1	26	24.5
31 - 40	427.7	36.2	27	29.1	335.3	34.1	32	49.5
21 - 30	312.9	25.5	27	29.1	292.5	25.5	25	23.0
0 - 20	178.1	13.6	5	6.0	324.8	13.7	25	23.0
			92	100.0			108	100.0
$\bar{x}$	361.6	41.8	46.4%		301.2	31.4	53.6%	

	Centralized Curriculum Control	Multiple Curriculum Control
	Complexity Percentages	
Larger Colleges	44.4	31.9
Smaller Colleges	39.3	36.1
Curriculum Complexity	41.8	31.4
Curriculum Size $\bar{X}$	361	301

The relation between career programs or complexity of curriculum, or centralized versus multiple control positions, is in the opposite direction predicted by Harris. These data suggest that centralized positions relate more positively, with greater complexity and curriculum size than multiple positions. The percentage differences are supported by the rank order correlations which indicate that the centralized colleges not only have larger curriculum and greater complexity, but that the proportion of career programs in these colleges is more consistent.

Departmentalization Organization Levels and Number of Units on Each Level.--The two-year colleges, with four or five exceptions, use the traditional bureaucratic organizational charts to represent the relationship between various functions. Those who do not have three-dimensional models which represent a wider series of relationships and incorporate multi-structural designs rather than the unitary two-dimensional traditional model.

Divisions and Departments.--In structuring their operations, 20.3 per cent of the colleges utilize both departmental and divisional sub-units. Others use either a division or a department title to designate their subordinate operational units. Divisional nomenclature is preferred in 45.4 per cent of the sample, while 34.3 per cent choose the departmental designation as their sole title for sub-divisions within the college (Table 23).

Among the smaller colleges 37.5 per cent use a combination of departmental and divisional structural arrangements. The larger colleges choose either a divisional or departmental title and only 15.3 per cent of the larger colleges utilize the combination to designate subunits, with 14.8 per cent of the medium and intermediate colleges adopting the combined arrangement.

In the case of the medium and medium-large colleges, 53 per cent prefer the divisional title, while the largest colleges divide terminology almost equally between

TABLE 23.--Organizational Size and Division/Department Structure.

Organizational Size	N	Division	Department	Div./Dept. Combined
5,000 +	52	21	23	8
2,500 - 5,000	43	24	10	9
1,001 - 2,500	58	30	22	6
0 - 1,000	48	16	14	18
	201	91	69	41
Percent		45.3	34.4	20.3

the two. As size increases, the department or division term predominates, and only 14 per cent of the largest colleges utilize multiple terminology.

When differences in these departmental and divisional patterns are combined in relation to age, 22 per cent of the colleges under ten years elect a divisional structure with 19 per cent of this age category electing departments and 8 per cent using a combination (Table 24). Among the older colleges the division structure predominates.

No strong relationships were found between the colleges nomenclature and the variables under consideration.

TABLE 24.--Organizational Age and Division/Department Structure.

Organizational Age	Division	Department	Division/ Department Combined	Totals
50-75	16	2	3	21
26-50	20	16	7	43
11-25	9	13	15	37
0-10	46	38	16	100
Totals	91	69	41	201
Percent	45.3	34.4	20.3	100.0

Organizational Levels.--A review of data from organizational charts supplied by the colleges provides information on the horizontal designs of the colleges. The chief executive level is considered as the first level and successive levels identified. Half levels or intermediate levels were generally ignored when a review of these revealed them to be auxiliary, subordinate functions of another level, often indicative of status or compensation differences rather than a true organizational level with separate function (Table 25).

TABLE 25.--Distribution of Organizational Levels.

Organization Levels	Absolute Frequency	Relative Frequency Percent	Cumulative Adjusted Frequency Percent
2	7	3.24	3.2
3	50	24.9	28.3
4	91	45.3	73.6
5	41	20.4	94.6
6	11	5.5	99.5
7	1	.5	100.0
	201		

Range	13
Mean	4.00
Median	3.97
Standard Deviation	1.21
Standard Error	.085
Skewness	1.503
Kurtosis	15.125

Horizontal or hierarchical levels as determined from the colleges' organizational charts range from 2 to 7. The mean, median, and mode are singularly in agreement with 45.3 per cent or 91 colleges utilizing a four-level type of structure. Fifty organizations use a three-level pattern and 41 use a five-deep series of horizontal levels.

There is a strong correlation between size and the levels used to organize college activities. The smaller colleges use three levels; medium and medium-large colleges use four levels, and the largest prefer a five design (Table 26). The correlation coefficient between size and horizontal divisions is very strong (r = .866).

TABLE 26.--Organizational Size and Structural Levels.

Size	Levels 2	3	4	5	6	7	Totals	Mode
5,000+		1	22	25	4		52	5
2,501-5,000		8	24	7	4		43	4
1,001-2,500		20	28	8	1	1	58	4
0-1,000	7	21	17	1	2		48	
Totals	7	50	91	41	11	1	201	

N = 201	
Mean	4.00
Median	3.97
Mode	4.0
Standard Deviation	1.21
Standard Error	.086

When age is considered, there is no difference between age categories of the levels used to structure the colleges' activities (Table 27).

TABLE 27.--Organizational Age and Horizontal Structural Levels.

Age	Levels 2	3	4	5	6	7	Totals	Mode
51 - 75		3	12	4	2		21	4
26 - 50		13	16	11	2	1	43	4
11 - 25		7	18	9	3		37	4
0 - 10	7	27	45	17	4		100	4
Totals	7	50	91	41	11	1	201	

N = 201	
Mean	4.00
Median	3.97
Mode	4.0
Standard Deviation	1.21
Standard Error	.086

The relationship between structural levels and curriculum size is of interest because these are viewed as intervening variables. Findings relating levels to size and age have been presented. Table 28 presents the data profile when curriculum size and career curriculum or complexity relationships are considered.

When organizational size and mean curriculum size for the four size categories are reviewed (Table 29), the range is from 204 courses in small colleges to 561 courses in the larger colleges. When curriculum size is related to organizational levels, the range is 171 for colleges with only two levels and 536 for colleges with six or more levels.

Organizational size is related to hierarchical level as the strong positive correlation coefficient ($r = .866$) demonstrates. Curriculum size is also related to organizational levels, but to a less imposing degree, as indicated by the coefficient ($r = .341$) expressing this relationship. This is considerably over the .01 level of significance of .180.

The relationship between organizational size and structural levels is the strongest correlation between variables found in the study. This was true for administrative size and as in that case the correlation with curriculum size is weak. In the case of organizational levels and curriculum size, it is less than half of the strength for size correlation with administrative size.

When the contingency tables relating this intervening structural variable to career curriculum or complexity is reviewed, there does not appear to be any covariation between these variables. When the pairs of data are correlated, a very modest coefficient ($r = .240$) just over the $P.01 = .180$ significance level results. This is not strong enough to suggest that these structural arrangements are very important in this measure of organizational goal achievement.

Departmentalization.--Another measure of departmentalization or specialization used in classical organizational studies has been the number of discrete units on each horizontal level.

Second Level.--An examination of the organizational charts for these details finds that, on the second level of two-year colleges directly under the chief administrative officer, there is a range from 1 to 6 units (Table 30).

TABLE 28.--Organizational Levels, Curriculum Size and Curriculum Complexity.

	Curriculum Size						Curriculum Complexity						
Levels	0-250	250-500	500-750	750 +	$\bar{x}$ Size	College Size $\bar{x}$	0-20	21-30	31-40	41 +	$\bar{x}$ Complexity	Total	Distribution By Percent
6 +	2	6	3	1	536.	6429.	2	3	5	2	36.7	12	6.0
5	8	13	12	8	472.	6185.	6	11	13	11	35.4	41	20.4
4	44	38	9		275.	2854.	15	22	16	38	35.5	91	45.3
3	36	13	1		214.	1888.	9	11	16	14	35.4	50	24.9
2	4	2	1		171.	1161.	1	1	2	3	41.0	7	3.4
Total	94	72	26	9	324.		33	48	52	68	35.5	201	100.0
$\bar{x}$ Size/ Complexity						4067	14.3	26.0	35.0	50.7			
Percent of N	46.9	35.8	12.9	4.4			16.6	23.8	25.8	33.8			

TABLE 29.--Distribution of Size and Curriculum Size.

Size	0 - 100	101 - 250	251 - 500	501 - 750	751 +	Total	Mean $\bar{X}$
5,000 +		3	19	21	9	52	561.5
2,501	3	13	26	1		43	294.0
1,001 - 2,500	4	27	27			58	243.8
0 - 1,000	5	35	8			48	204.0
Total	12	78	80	22	9	201	324.4

Mean	324.4
Median	278.0
Standard Deviation	216.054
Standard Error	15.239
Kurtosis	8.137
Skewness	2.146

TABLE 30.--Second Organizational Level Departmentalization Distribution.

Value	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
1	33	16.4	16.4
2	29	14.4	30.8
3	77	38.3	69.2
4	26	12.9	82.1
5	19	9.5	91.5
6	16	8.0	99.5
6+	1	.5	100.0
	201	100.0	

Mean	3.1
Median	3.
Mode	3.
Standard Deviation	1.6
Standard Error	.114
SK	1.27
Kurtosis	5.816

Thirty-three colleges (16.4 per cent) have a single position, while 29 (14.4 per cent) bifurcate their activities on this level. Seventy-seven (38.3 per cent) utilize three units on this second level, and the remaining 63 (30.1 per cent) use 4 to 6 units. Seven colleges (3.5 per cent) have only a two-level organizational structure and everyone reports to the president.

A mean of 3.1 units for the sample is virtually identical with the mode and median of 3. There is a low correlation between size and the number of departments on the second level, r = .256 with a confidence interval of (P.01 = .180). The mode for all sizes does not vary. At this level the colleges are similar regardless of size or age.

Correlation coefficients are very low when the number of units on this level are related to curriculum size (r = .269) and complexity (r = .199). Evidently, the range here is too small to influence either size, curriculum size or complexity, while there is no relation with age (Table 32).

TABLE 31.--Third Organizational Level Departmentalization Distribution.

Value	Absolute Frequency	Relative Frequency (Percent)	Cumulative Frequency (Percent)
N/A	7	3.5	3.5
1	1	.5	4.0
2	3	1.5	5.5
3	8	4.0	9.5
4	23	11.3	20.9
5	21	10.2	31.3
6	7	3.5	34.8
7	11	5.5	40.3
8	18	9.0	49.3
9	12	6.0	55.2
10	19	9.5	64.7
11	15	7.5	72.1
12	17	8.5	80.6
13	3	1.5	82.1
14	6	3.0	85.1
15	10	5.0	90.0
16	5	2.5	92.5
17	1	.5	93.0
18	3	1.5	94.5
19	2	1.0	95.5
20	4	2.0	97.5
21	1	.5	98.0
23	1	.5	98.5
24	1	.5	99.0
29	2	1.0	100.0
	201	100.0	

Mean	9.09
Median	8.62
Mode	4.
Standard Deviation	5.23
Standard Error	.369
SK	.880
Kurtosis	1.290

TABLE 32.--Organizational Size and Second Level Departmentalization.

Size	Department 1	2	3	4	5	6	6+	Total	Mode	$\bar{X}$
5000 +	6	6	15	6	9	10		52	3	3.74
2501-5000	8	7	15	8	2	2		43	3	2.92
1001-2500	10	8	28	6	3	3		58	3	2.96
0-1000	9	8	19	6	5	1		48	3	2.97
Total	33	29	77	26	19	16	1	201	3	
Percent	16.4	14.4	38.3	12.9	9.5	8.0	.5	100		

N	201	Standard Deviation	1.611
Mean	3.119	Standard Error	.0114
Median	3.00	SK	1.287
Mode	3.00	Kurtosis	5.816

The present evidence of centralization at this level is in sharp contrast with an earlier study by Ayres and Russel, which reported a much larger number of units reporting to the chief administrator (8-10) on this organizational level.

Third Level.--The third organizational level has an increased range from 1 to 29 units. The mean number of departments on the third organizational level is 9.09. Only 20 colleges (9.9 per cent) use more than 15 units, the rest are distributed close to the mean for this level.

On this level the correlation between organizational size and increased departmentalization is not as strong and reflects the increasing span of alternatives elected by the colleges. The correlation coefficient between size and department size drops ($r = .216$) but is still positive and significant when the ($P.01 = .180$) confidence interval is noted (Table 31).

The small colleges have a mean of 7.7 departments on the third level; medium size colleges have 8.9 departments, and the largest colleges have a 9.7 mean (Table 33).

Fourth Level and Beyond.--Contingency tables for fourth levels and beyond were prepared from the sample data. Although many colleges utilize more than three levels, the number of subunits or departments decreases at the fourth and successive levels. All efforts to correlate these with the independent or dependent variables are not significant at either the .01 or .05 level.

Departmentalization and Curriculum.--According to the analysis of these data, the third organizational level is most representative and consistent when these subunits are considered. Consequently, the relationships between the independent variables size, age, and the dependent variables curriculum size and complexity can be investigated on this level.

Contingency tables have been constructed to investigate the relation between the number of departments on the third organizational level, curriculum size and complexity (Table 34).

There is a slight increase in curriculum size as the number of third level departments increases. Except in the case of colleges with 16-20 departments on this level, curriculum size is closely related to the number of departments.

TABLE 33.--Organizational Size and Third Level Departmentalization.

Size	Departments 1-5	6-10	11-15	16-20	21-30	Totals	$\bar{X}$
5000 +	14	14	17	3	3	52	9.7
2500-5000	12	18	7	4		41	9.0
1000-2500	17	19	17	4		57	8.9
0-1000	13	16	10	4	1	44	7.7
Total	56	67	51	15	5	194	9.09
Percent	28.9	34.6	26.3	7.7	2.5	100	

Mean	9.09
Median	9.00
Standard Deviation	5.23
Standard Error	.036
SK	.880
Kurtosis	1.290

90 38

TABLE 34.--Third Level Departments and Curriculum Size and Complexity.

Departments Third Level	Curriculum Size					Curriculum Complexity						
	0-250	251-500	501-750	750 +	$\bar{x}$ Size Curriculum	0-20	21-30	31-40	40 +	$\bar{x}$ Complexity	N	Percent of N
21-30	2	1	3	3	572.		1	3	5	49.6	9	4.8
16-20	8	2	1		221.		2	3	6	44.4	11	5.9
11-15	18	23	10		387.	12	11	12	16	24.7	51	26.3
6-10	28	28	9	5	343.	10	23	15	22	29.7	70	34.8
1-5	29	24	6	1	314.	11	11	19	19	29.8	60	28.2
N	85	78	29	9		33	48	52	68		201	100.0
Mean for N					324.					35.5		

There is a very weak, yet significant, relationship between organizational size and departmentalization on this level (r = .216). There is no significant relation between age and departmentalization.

In sharp contrast to the size-department relationship, a positive and strong covariation (r = .748) exists between the number of departments and curriculum size. A much stronger relationship is found between the number of departments and career courses or curriculum complexity (r = .822).

Summary

Findings regarding the profile and relationship of the intervening structural variables representing centralization and departmentalization were outlined in this chapter.

These structural variables were related to the size, age, curriculum size and curriculum complexity. In this way, the two-year public colleges' existing patterns of organization and correlates of various structures were explored.

Centralization was represented by two variables, administrative size and a single or multiple curriculum control pattern on the second organizational level.

Administrative size is moderately related to both independent variables, size and age. It is not significantly related to the dependent variable curriculum complexity, the index of career programs offered. Administrative size is weakly related to the other dependent variable, curriculum size. The relationships between these intervening variables, organizational size and age, are moderate and even weaker or insignificant when related to curriculum size and complexity and suggests that this type of centralization is not a strong factor in the performance of two-year colleges.

It is of interest that administrative size is positively and most strongly related to faculty size.

Second level centralization of curriculum control represented by single or multiple positions is not significantly related to any of the organizational variables when either Rank Order correlations or Pearson's R coefficients are considered. There is a greater curriculum complexity associated with the centralized control position, and there are also larger curriculum size when

control is centralized. The assertion that multiple curriculum control positions under the chief executive officer are essential to greater career offerings is not supported, but contradicted, by these findings. Colleges with a single position for curriculum supervision and control offer a larger percentage of their curriculum in career fields.

As intervening variables, administrative size is modestly related to age and size, and less strongly to increased curriculum size. It does not correlate with curriculum complexity. The relationship between size, age, and centralized or multiple second level curriculum control is less strong, but positively related to both curriculum size and complexity. Colleges with a centralized curriculum central position have both a larger curriculum and greater complexity than those utilizing multiple control positions.

Departmentalization was investigated by looking at both horizontal hierarchical levels and the vertical units on these levels in relation to size, age, curriculum size and curriculum complexity.

There is a very strong relation between organizational size and the number of levels the colleges utilize to structure their activities. No significant relationship exists between age and these levels. A positive, but weak, relationship between the number of levels and curriculum complexity was found. The correlation with curriculum size is stronger, but very much less than the relationship between levels and organizational size.

The relationship between size and levels is almost three times as strong as the relation with either curriculum size or complexity. Because this modest relationship with organizational outputs as indicated by the dependent variable curriculum size and complexity is not strong, additional efforts were made to examine this difference. The most plausible suggestion arises from a review of the strong relationship between size or faculty size. While curriculum size reflects the richness of curriculum offerings, not sections offered, organizational size represents students and in another manner, faculty to be served. The hierarchical structure strongly relates to the number of faculty and students contained in the organization, but does not correlate in the same way with curriculum size and complexity.

An analysis of third level differentiation of units or departments found relationships which were in the opposite direction. These were more positively and strongly related with the dependent variables.

Third level differentiation or the number of units or departments identified at this level is weakly related to organizational size. However, the relationship to curriculum size and complexity is so strong that it is among the highest found for all variables. At the third level, there is a very strong relationship between a high degree of departmentalization and a higher degree of curriculum size and complexity.

According to these findings, the intervening variables of centralization do not strongly relate to either dependent or independent variables. Administrative size tends to be positively associated with increased curriculum size, but the failure of larger colleges to identify all their administrators poses questions about the correlations ineffective and renders some of the data suspect.

The variables representing departmentalization were divided in the strength of these correlations. Levels were strongly related to organizational size, an independent variable. Discrete units on the third level were just as strongly related to both curriculum size and complexity, dependent variables.

According to these findings, a centralized or single dean, or position for curriculum control relates most strongly to the organizational goals of comprehensive curriculum. Third level departmentalization also strongly relates with a more complex and larger curriculum. While some authorities assert that multiple or decentralized positions on the second level are necessary for greater curriculum complexity, these findings suggest that third level departmentalization or separation is more positively related to these organizational goals. Neither administrative size or the number of organizational levels, although strongly related to organizational size, is as significantly related to curriculum size or complexity.

Thus one of the variables representing centralization, and one of the variables representing departmentalization, related most strongly with the dependent variables. Two variables representing these intervening structural strategies are most strongly related to the independent variables.

CHAPTER IV

SUMMARY AND CONCLUSIONS

A theoretical orientation which involves Parsons' analysis of organizational functions and the classical structural concerns with centralization and departmentalization provides the conceptual panorama against which the data of this study is viewed.

A major question in this research is related to the organizational profile of the public two-year colleges. Once these data were available, the other questions were directed to the organizational correlates of goal achievement as represented by curriculum size and complexity.

Two independent variables, age and size, were outlined and the relationships between curriculum size and complexity. The dependent variables were investigated. Intervening variables, representing centralization and departmentalization, provided additional information regarding the structural profile and its relation to the major variables.

The Research Perspective

This research is an exploratory or reconnaissance effort conceptualized as the first step in a longitudinal study of the two-year colleges. The study seeks to establish a profile of these colleges structurally and functionally for the 1968-69 period so that at subsequent five-year intervals, their growth and development may be compared as an ex post facto study. A decision was made to use existing documents and reports of summaries of national surveys to explore their usefulness as a source of research data.

There were no problems with the independent variable size. In some instances the data relating to age became difficult to code, especially in the case of older junior colleges which became a part of the newer two-year college state-wide systems and the date of their colleges emerging from local K-12 public school district control.

Curriculum size and curriculum complexity, the independent variables, were relatively easy to code and tabulate. As the analysis proceeded, it became evident that in addition, the actual number of sections offered or the actual enrollment in each section expressed in credit hours would provide a more powerful statistical tool. These would provide more precise measures of both curriculum complexity and comprehensibility.

The intervening variables divided in their relationship to the major variables. Two of the four, administrative size and hierarchical levels, were more strongly associated with size, while centralized curriculum control and third level departmentalization most strongly related with curriculum size and curriculum complexity. Age did not prove to have strong relationships with the key variables.

Research Questions

Several research questions, based on propositions encapsulating what is known or exemplified by past organizational studies, were posed to guide this study. They were:

1. What is the range and distribution of size and age in public two-year colleges?
2. What is the range and distribution of curriculum size and complexity in public two-year colleges?
3. Is an increase in size or age related to an increase in either curriculum size or complexity?
4. What is the range and distribution of faculty size and its relation to size and age?
5. Are there regional differences in size, age, and curriculum?
6. What is the range and distribution of administrative size, and centralized curriculum control in public two-year colleges?
7. What is the range and distribution of departmentalization and operational levels in public two-year colleges?
8. What is the relationship between administrative size, centralized curriculum control, and curriculum size complexity?

9. What is the relationship between operational levels, departmentalization and curriculum size and complexity?

Findings

Analysis of the sample data was successful in that once the organizational profile was established it was possible to establish some organizational correlates of curriculum size and complexity (Tables 35, 36, and 37).

These findings provide some suggested answers for the research questions and pose other questions for exploration and the development of hypotheses to be tested.

Organizational means for the colleges of the sample indicate that along with a size of 4067, there is a mean age of 19.9 years. Faculty mean size is 156, and the administrative mean size is 14.3. Most of the colleges use four hierarchical levels to structure their activities with three divisions of departments on the second level, nine on the third level, and 13.9 on the fourth level. Curriculum size and complexity vary with organizational size and, to a small extent, with age. Curriculum mean size is 324 courses, and the complexity of career mean is 35.5 per cent.

Organizational size and age in these colleges do not correlate significantly. In these organizations size and age are independent variables. Age was not as powerful as size in its relationships to the organizational variables and frequently failed to be significant. Burton Clark's finding that across time the liberal arts or transfer programs eclipse the career or technical programs is not supported. Clark points out that in the college at San Jose the relatively low degree of autonomy realized by the college limited its ability to achieve its goals. Established to provide technical and vocational programs of study, the college found that between 1953 and 1956 these actually decreased from 48 per cent to 26 per cent; and the four-year transfer program had increased from 52 per cent to 74 per cent of all classes. He strongly suggests that this limitation of autonomy contributed to the failure of the school to effectively increase its technical and vocational effectiveness.[1]

This type of goal displacement is not evident when the performance of the colleges across more than 70 years is considered. It should be pointed out that Clark's study and findings involved one college in San Jose for only three years.

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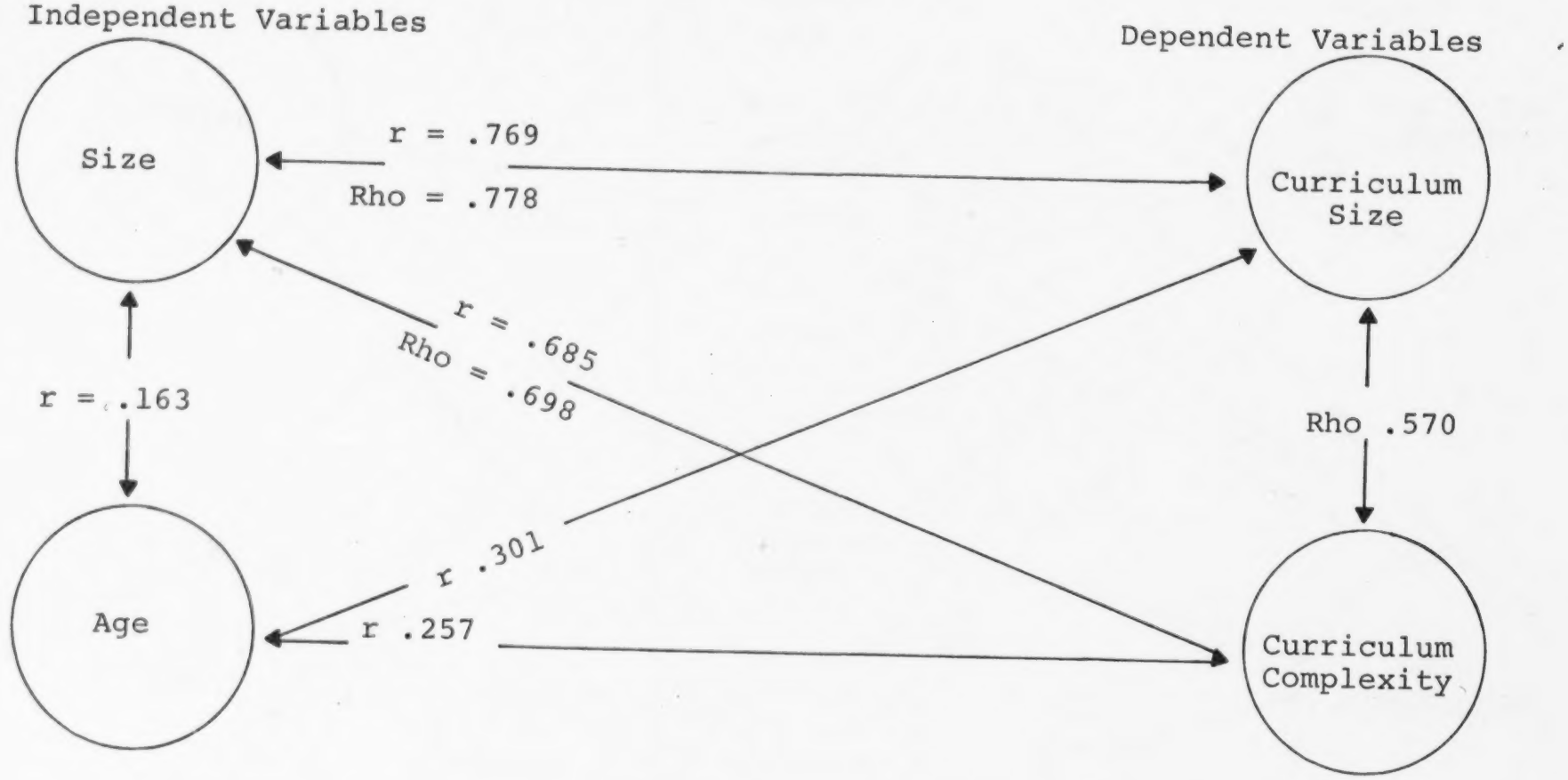
[1]Clark, op. cit., pp. 102-130.

TABLE 35.--Organizational Profile by Size.

	N	Percent	Size $\bar{x}$	Age $\bar{x}$	Faculty Size $\bar{x}$	Admin. Size $\bar{x}$	Organ. Levels. Mode	Dept. Second Mode	Dept. Third Mode	Dept. Fourth Mode
5000 +	52	25	10679	24.9	342.7	20.2	5	3	10	10
2501-5000	43	21.3	3780	19.4	150.1	21.2	4	3	9	14
1001-2500	58	28.9	1656	14.8	79.6	12.5	4	3	8	12
0-1000	48	23.9	659	20.9	37.2	7.7	3	3	7	11
Means and Totals	201	100.0	4067	19.9	156.2	14.3	4	3	9	13

	Curriculum Size	Curriculum Complexity Percent	Admin. Faculty Ratio	Admin. Student Ratio	Faculty Student Ratio
5000 +	561	42.	1:17	1:534	1:30
2501-5000	294	35.	1:9	1:236	1:25
1001-2500	243	40.	1:5	1:110	1:20
0-1000	204	32.	1:4	1:82	1:16
Means	324	35.5	1:9	1:240	1:22

TABLE 36.--Research Variable Correlations.

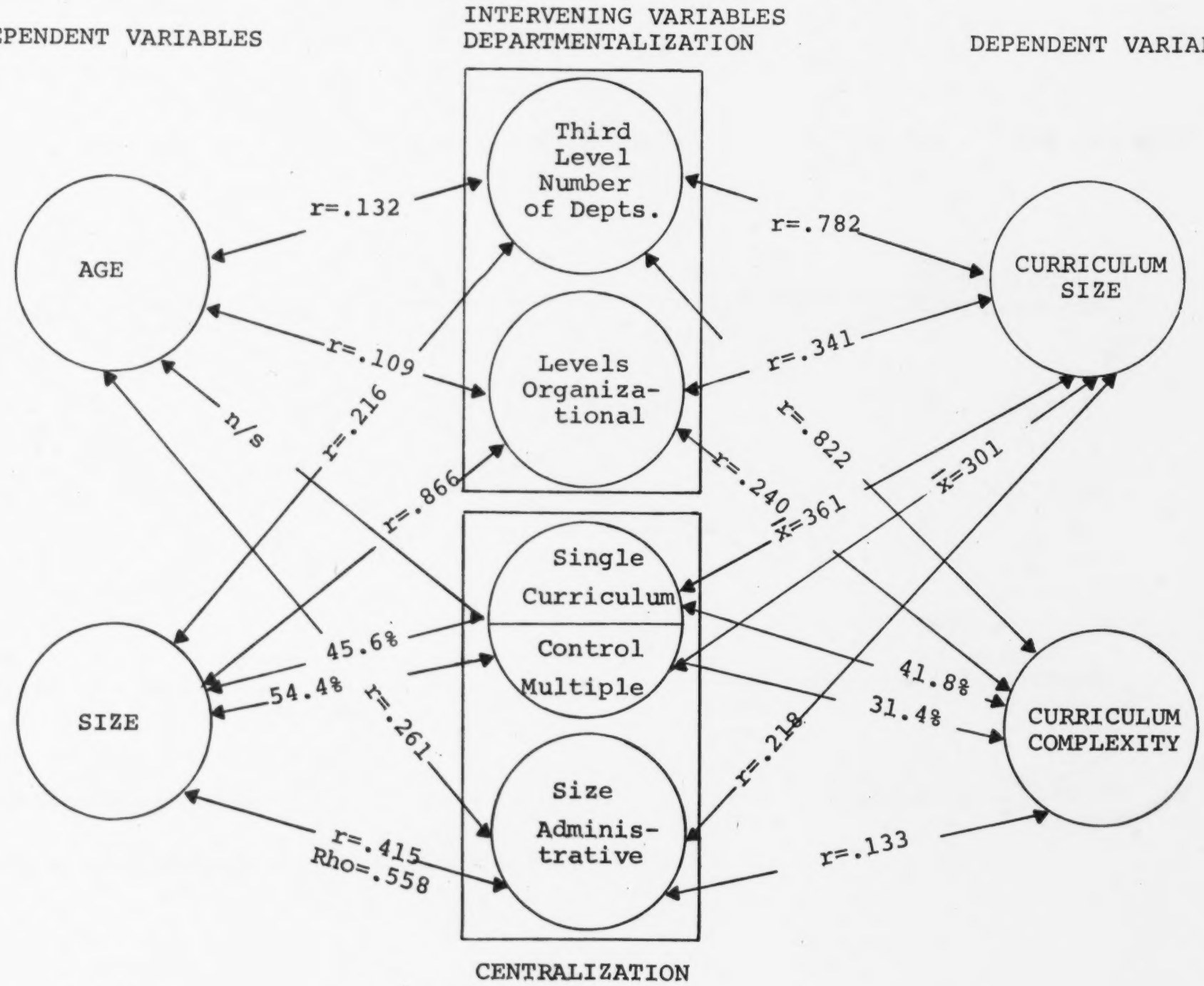


P .01 = .180 for r.

P .05 = .140 for r.

P .01 = .210 for Rho.

TABLE 37.--Intervening Variables



P .01 = .180 for r. P .05 = .140 for r. P .01 = .210 for Rho.

This finding that the colleges are maintaining a high level program across time is perhaps an important product of this analysis. Hypotheses should be developed and tested relating to the reasons why this emphasis is being maintained contrary to Medsker's and Clark's findings.

Size is positively related to increased curriculum size and more strongly related to complexity or career offerings. Age is associated with increased curriculum size and complexity to a significant degree, but the value of the correlation coefficients between age and curriculum are only half those for size and curriculum.

Centralization is represented by two variables, administrative size and the second level curriculum control positions. Both variables are significantly related to size. Administrative size is related to both size and age to an almost identical degree. Second-level curriculum control positions are not related to age, yet have a moderate significance when correlated with size. Adminstrative size is positively and weakly correlated with curriculum size and complexity.

The findings are contrary to the prescriptive statements by Harris that unless colleges provide separate second-level positions for career curriculum they do not grow and that the colleges which provide a second level centralized dean or curriculum control position exhibit greater curriculum complexity. Colleges with a central position offer more career programs.

Departmentalization, as indicated by the levels, is strongly correlated with organizational size and moderately related to curriculum size and complexity. On the third level the number of separate units is moderately related to size and very strongly related to both curriculum size and complexity.

The relationships between variables representing centralization and the major variables were not as strong as those relating to departmentalization.

Regional comparisons indicate substantial differences in size and age between the older, larger colleges in Western states and the younger, smaller Eastern and Southeastern colleges. Curriculum complexity does not vary between regions to the degree that size and age do. Student-faculty ratios are not consistent with size, age or regional variations.

Theoretical Relationships

Parsons' functional imperatives for formal organizational activities proved to be a useful analytical tool when the variables in this study were related to his model. The adaptive functions of the two year colleges which were indicated by changes in size and age point clearly to the importance of environmental variables. Clark indicated in his study these have great significance in relation to the maintenance of a comprehensive curriculum.

The integrative functions indicated by the variables relating to centralization and departmentalization divided in their relationship with the dependent and independent variables. Administrative size and the hierarchical levels utilized related most strongly and positively with the size of the colleges. The other two variables used as indices of centralization and departmentalization were less strongly related to size and age and most strongly related to size of curriculum and larger career programs.

Goal achievement as indicated by the curriculum size and complexity most positively related to the size of the organization, centralized curriculum control positions and increased departmentalization on the third organizational level.

This effort is related to Starbuck's appeal for more data based on studies of organizations of similar characterisitcs. These data allow the profile of the two-year colleges to be examined. The longitudinal aspect of these data is not yet available but should allow for comparative study of their actual growth and operational or goal achievement across time.

When viewed from the perspective of the theoretical concerns with goal achievement and organizational effectiveness some insight into the performance of colleges which by law and explicit philosophical statements have established some goals as their operational objectives is provided. These goal statements represent values but whatever their implications they do provide some indices which this study attempted to relate to organizational structural arrangements. Clark's classical study and Medsker's further assertion that these colleges are not meeting their goals is brought into question by these data. The older colleges are only slightly less effective in offering career programs than the most recently established colleges.

Previous studies by Carson, Stroup, Flexner, Caplow and Millett do not agree on whether colleges and universities are bureaucracies or formal organizations in the classical sense. Parson's contends for a view of higher education from the standpoint of a social institution rather than the complex or formal organizational conceptualization. The strong and formal statements of goals, often established by law for the two year colleges, identifies them as formal organizations.

These data fail to establish the direct relationships between size, structure and functions found in the public schools, however, the high identification of departmentalization with curriculum size and complexity and the casual relationship between administrative size and these variables appears to follow the pattern of higher education. While these are not bureaucracies in the traditional sense, they are formal organizations.

When the curriculum of these colleges, as reported here, is viewed in relation to future occupational trends which indicate a growing number of technical or paraprofessional openings, the slow progress of the two-year colleges in developing these areas reminds one of the Nevett Sanford findings in 1962 that four-year colleges also failed to keep pace with social developments. Berleson found this was also a problem in graduate departments.

This "organizational lag" calls attention to the older concerns with the division between professional and bureaucratic or authority patterns in formal organizations. Blau's earlier observations and the recent Dressel, Craig, Marcus report point out the problems growing out of this duality. The present study which indicates a strong correlation between size, faculty size, and administrative size as well as organizational levels would seem to indicate that there are these elements of traditional bureaucracy in the colleges. However, the strong correlation between departments and curriculum size and complexity also indicates a strong professionalization of faculty and development of these interests in two-year colleges. This recapitulates the trends Dressel et al. pointed out in the universities. Parsons and a newly formed group reviewing higher education consider this as a major problem yet to be resolved.

These data indicate a strong relationship exists between second level organizational patterns and centralization and control with the classical variables of size and age. Third level decentralization or departmentalization is strongly related in the opposite direction and these findings reflect several theoretical concerns.

The colleges evidently reflect and these data do not resolve the theoretical problem of professionalization and administrative control as indicated by the bifurcated relationship between the variables on the second and third levels of the organizations.

There is also support for the propositions advanced by Price based on empirical data from other organizational studies related to decision making. The position that strategic decisions if centralized contribute to increased effectiveness would be supported by the finding that a centralized control position on the second level for curriculum related strongly to a larger and more complex curriculum in this case. The proposition that tactical decisions which are decentralized contribute to organizational effectiveness is supported by the findings that third level increased departmentalization is strongly related to increased curriculum size and especially to increased complexity.

The proposition that organizations with a high degree of size are more effective than organizations with a low degree of size is supported by the positive high correlation between size and complexity and curriculum size. This proposition was qualified by the introduction of professionalization as an exception to this tendency. If the relatively strong association found can be interpreted to mean that these are not professionalized organizations an interesting counter trend to those mentioned above is present and should be subsequently looked into.

Ayres and Russel in an earlier study of the presidential span of control found that in two-year colleges, the chief executive officer had from 7 to 10 administrators reporting to him. This study found a mean of three administrators in this span of control.

Anderson and Chambers found that separate departments appeared to facilitate the development of new functions in colleges and universities. The high correlation between the number of third level departments and curriculum complexity found here suggests that this is also the case in two-year colleges.

Several questions may be considered relative to Parsons' "adaptive" functional category regarding size and age findings in this study.

Frequently in organizational studies size and age correlate, while here they do not. Age is generally seen as an adaptive response, learned behavior requiring time,

and older organizations are assumed to have "survived" and are better able to cope with the environment.

Size is growth, a consequence of decisions, a symbol of achievement or even an organizational goal. Size is generally viewed as closely related with goal achievement.

Because age and size do not correlate, is there a possibility that there is now a new type of organization which does not involve age or time in relation to its growth or size? Is it possible that these colleges represent a new organizational phenomenon? What do we know about new organizations which use knowledge, technology, and personnel appropriated from older organizations to achieve their goals without ever experiencing an organizational growth cycle? Are these organizations able to "skip" some development phases and follow new patterns as some developing nations do when appropriating models for economic, political, and social programs?

What are the organizational patterns, problems, and variables unique to this type of structure, virtually without age but involving great size dimensions? In these cases, what are the internal or "integrating" variables; are they significantly different from traditional organizations?

Clark introduces the idea of goal displacement or change across time. While this study does not support the idea that complexity or career programs decline as colleges get older, the question of environmental exchanges is a viable center of interest. How do these colleges adapt, integrate or co-opt other organizations in their community? Specifically, what are their relationships with the public schools, private business colleges, business, industry, and the universities?

A major present concern in higher education is how goals are determined. In the case of the two-year colleges, their goals are the result of legislative acts. Across time, how are these either articulated or changed by bargaining and coalitions of groups and other organizations within and outside the colleges?

Are the two-year college goals true organizational goals, or are they goals of other political, educational, or economic organizations? Is it possible that the most significant organizational variables in these colleges may be found outside the organizations, but those traditionally looked for inside organizations? Lazarsfeld and Theilens suggest public colleges are greatly influenced by

political and legislative action, when compared with private colleges. Studies of these are needed in two-year colleges.

These questions regarding the possibility of new functional relationships and variables logically introduce the structural system of organizations. Multiple structural arrangements have been suggested as most appropriate to modern organizations by a number of authors.

Do these new organizations within higher education adopt new systems of communication, work flow, authority, and responsibility? If every structure is a theory, then what is the theory of these structures? Are the "open systems" without walls, or well-defined boundaries between them and society as Birenbaum urges and Parsons advocates? Does the relatively weak correlation in this study between most structural arrangements and goal achievement suggest that other variables may be more closely linked to organizational goals or does this suggest their growth and lack of formalization or bureaucratization?

Of interest then is an older question regarding professionalization. Is the decision making and bureaucratic structure in the two-year college considerably less important than in other organizations? What are appropriate measures of professionalization for these organizations? Can some of these questions be operationalized in relation to Parsons' "latency" or maintaining organization goals and motivation across time?

Methodological Constraints

The decision to use data from a number of sources did not prove to be economical in either respect to the time required for assembling or analysis. Follow-up requests and slow responses to direct inquiries to colleges for information were major obstacles. Some documents were out of print and reduced the sample size because only partial data was available for many colleges.

Data could be verified from original sources in the case of catalogues and schedules, but apart from a few statistics, the Higher Education General Information Survey data had to be accepted "as is," and in the case of underreporting for administrative size was a definite limitation.

Although the exploratory and ex post facto research design inherently involves limitations on the manipulation of the intervening variables and hypotheses development and

testing, the desire for more powerful proof and more certainty tempts the researcher to claim more than the data sustains.

Regression coefficients did not prove as useful as Pearson product-moment correlations and Rho coefficients. This opened the question of variable selection in the case of several of the intervening variables. Were there other variables which were overlooked that would have been more efficient and descriptive, more closely related to the major variable? Considerable effort was expended in an effort to analyze the statistics through multivariate technique analysis.

Operationalizing centralization by using administrative size as an index did not prove to be as strong as expected in relation to curriculum performance. While curriculum size and complexity were used with some success to represent goal achievement, other indicators must be considered. The number of terms or semesters a student was retained may have proved more discriminating.

Perhaps a greater effort to incorporate an economic indicator, such as cost per student, should have been made. Data for this were requested but eliminated on two counts, its sparsity and general unreliability.

The impact of formula budgeting or Cost Benefit Budgeting was evident in the California data. This type of central control of funds determines the ratio of faculty and administration to students and homogenizes the data. The colleges in this case are not autonomous. This practice is spreading and will greatly influence any follow-up effort as various states adopt a ratio formulae and colleges are forced to comply.

Age as an independent variable related so weakly with the intervening variables that efforts expended in analysis of this aspect of the colleges only succeeded in establishing that age was far less significant than size in these organizations.

In view of these limitations and the questions raised, any future study of two-year public colleges as organizations needs to incorporate the following concerns:

1. The relationship between size and population of the geographic area served.

2. The relationship between size, curriculum size, curriculum complexity and economic resources available.

3. A review of state coordinating and controls, and their influence on local organizational structures.

4. How and when subunits are formed and located in the organization structure.

5. The exchanges between these organizations and their communities, and the parties involved in both instances.

6. What alternative or multiple structures exist within the colleges, senates, unions, committee structures?

7. Goals of these organizations need to be seriously studied. How are they established, changed, or ignored? How are they perceived by faculty, students, community, and administrators, to name a few groups?

The limited objectives of this study have been realized in the development of the organizational profile and the establishment of some structural correlates of the public two-year colleges' pattern of growth and development. However the questions which logically arise in efforts to analyze these data suggest other and perhaps more important variables to be included in any future study of these organizations. These findings do provide a minimal benchmark against which follow-up or future studies of the changes across time and in size of these colleges may be compared.

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APPENDICES

APPENDIX A

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, OFFICE OF EDUCATION-- HIGHER EDUCATION GENERAL INFORMATION SURVEY INSTRUMENT

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

BUDGET BUREAU NO. 51-R0560
APPROVAL EXPIRES: 6-30-70

HIGHER EDUCATION GENERAL INFORMATION SURVEY
INSTITUTIONAL CHARACTERISTICS OF COLLEGES AND UNIVERSITIES

1. INSTITUTION CODE NUMBER	REPORTING DATE NOT LATER THAN JULY 15, 1968

2. CORPORATE NAME OF INSTITUTION *(Covered by this report)*

3. ADDRESS *(City, State, and ZIP Code)*

4. AREA CODE – TELEPHONE NUMBER *(of institution)*

5. COUNTY

6. U.S. CONG. DIST.

7. NAME OF PARENT INSTITUTION *(If a branch of another inst.)*

8. ADDRESS *(City, State, and ZIP Code)*

9. LIST MAIN CAMPUS, ALL BRANCHES AND OTHER CAMPUSES. CHECK UNIT COVERED BY THIS REPORT.

Check	MAIN CAMPUS	Check	

NOTE: USE NUMERICS ONLY FOR DATES

10. DATE INSTITUTION ESTABLISHED	MO.	YEAR	11. DATE POST SECONDARY OR COLLEGE WORK FIRST OFFERED	MO.	YEAR	12. DATE DEGREES OR OTHER COMPLETION AWARDS FIRST GRANTED	MO.	YEA

13. IS YOUR INSTITUTION ACCREDITED BY ONE OF THE NATIONALLY RECOGNIZED REGIONAL ACCREDITING ASSOCIATIONS?
☐ YES ☐ NO *(If "YES", check below, the regional association that accredits your institution.)*

- ☐ (1) NEW ENGLAND ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS *(E)*
- ☐ (2) MIDDLE STATES ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS, COMMISSION ON INSTITUTIONS OF HIGHER EDUCATION *(M)*
- ☐ (3) NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS, COMMISSION ON COLLEGES AND UNIVERSITIES *(N)*
- ☐ (4) NORTHWEST ASSOCIATION OF SECONDARY AND HIGHER SCHOOLS, COMMISSION ON HIGHER SCHOOLS *(N*
- ☐ (5) SOUTHERN ASSOCIATION OF COLLEGES AND SCHOOLS *(S)*
- ☐ (6) WESTERN ASSOCIATION OF SCHOOLS AND COLLEGES ACCREDITING COMMISSION FOR SENIOR COLLEGES AND UNIVERSITIES AND ACCREDITING COMMISSION FOR JUNIOR COLLEGES *(W)*

14. OF THE NATIONALLY RECOGNIZED PROFESSIONAL ACCREDITED PROGRAMS LISTED BELOW, CHECK ALL THOSE WHICH ARE ACCREDITE AT YOUR INSTITUTION.

- ☐ (1) ARCHITECTURE: National Architectural Accrediting Brd.
- ☐ (2) ART: National Association of Schools of Art
- ☐ (3) BIBLE: Accrediting Association of Bible Colleges
- ☐ BUSINESS: Accrediting Commission for Business Schools
  - ☐ (4) Junior College
  - ☐ (5) Specialized College of Business, Degree Granting
- ☐ (6) BUSINESS: American Association of Collegiate Schools of Business
- ☐ (7) CHEMISTRY: American Chemical Society, Committee on Professional Training
- ☐ DENTISTRY: American Dental Association, Council on Dental Education
  - ☐ (8) Dental Hygiene
  - ☐ (9) Dentistry
- ☐ (10) EDUCATION: National Council for Accreditation of Teacher Education
- ☐ ENGINEERING: Engineer's Council for Professional Development
  - ☐ (11) Engineering
  - ☐ (12) Engineering Technology
- ☐ (13) FORESTRY: Society of American Foresters
- ☐ (14) JOURNALISM: American Council on Education for Journalism
- ☐ (15) LAW: American Bar Association, Section of Legal Education and Admissions to the Bar
- ☐ (16) LIBRARIANSHIP: American Library Association, Committee on Accreditation
- ☐ MEDICAL: American Medical Association, Council on Medical Education
  - ☐ (17) Medical Record Librarians
  - ☐ (18) Medical Record Technicians
  - ☐ (19) Medical Technology
  - ☐ (20) Occupational Therapy
  - ☐ (21) Physical Therapy
  - ☐ (22) X-Ray Technology
- ☐ (23) MEDICINE and BASIC MEDICAL SCIENCES: American Medical Association and Association of American Medical Colleges, Liaison Committee on Medical Education
- ☐ (24) MUSIC: National Association of Schools of Music
- ☐ (25) NURSING: National League for Nursing
- ☐ (26) OPTOMETRY: American Optometric Association, Council on Optometric Education
- ☐ (27) OSTEOPATHY: American Osteopathic Association
- ☐ (28) PODIATRY: American Podiatry Association, Council on Education
- ☐ (29) PHARMACY: American Council on Pharmaceutical Education
- ☐ (30) PUBLIC HEALTH: American Public Health Association
- ☐ (31) SPEECH and HEARING: American Speech and Hearing Association
- ☐ (32) SOCIAL WORK: Commission on Accreditation of the Council on Social Work Education
- ☐ (33) THEOLOGY: American Association of Theological Schools
- ☐ (34) VETERINARY MEDICINE: American Veterinary Medical Association, Council on Education

OE FORM 2300-1, T-68 REPLACES OE FORM 2300-1.0, 1967, WHICH IS OBSOLETE

AS HAVING SATISFACTORY ASSURANCE OF ACCREDITATION WITHIN A REASONABLE TIME BY A NATIONALLY KNOWN ACCREDITING AGENCY, GIVE NAME OF AGENCY OR ASSOCIATION *(See Items 13 and 14)*

IF YOUR INSTITUTION IS NOT ACCREDITED, GIVE NAMES AND ADDRESSES OF AT LEAST 3 INSTITUTIONS ACCREDITED BY NATIONALLY RECOGNIZED ACCREDITING AGENCIES AT WHICH CREDITS EARNED AT YOUR INSTITUTION ARE AND HAVE BEEN ACCEPTED AS IF EARNED IN AN ACCREDITED INSTITUTION *(NOTE: On a separate sheet, give names and dates of transfer of at least 3 of your students or graduates who have transferred to each of the institutions listed below.)*

NAME OF INSTITUTION *(a)*	ADDRESS *(Number, Street, City, State, and ZIP Code)* *(b)*

INSTITUTIONAL CONTROL OR AFFILIATION *("X" all appropriate)*

PUBLIC *(1)* FEDERAL		PUBLIC *(4)* SCHOOL DISTRICT		PRIVATE *(8)* INCORPORATED AS PROFIT MAKING	
(2) STATE		*(5)* COUNTY		*(9)* INDEPENDENT, NONPROFIT	
(3) TERRITORIAL		*(6)* TOWNSHIP		*(10)* RELIGIOUS GROUP *(Specify)*	
		(7) CITY			

SEX OF STUDENT BODY

WOMEN ONLY *(b)*	COED *(c)*	LEVEL OF PROGRAM *(d)*
		(1) NONCOLLEGIATE
		(2) UNDERGRADUATE
		(3) GRADUATE
		(4) PROFESSIONAL

19. IF YOURS IS A COEDUCATIONAL INSTITUTION, ARE ENROLLMENTS IN ANY OF YOUR SCHOOLS, COLLEGES, OR CURRICULUMS RESTRICTED TO ONE SEX?

☐ YES ☐ NO

MEN *(a)*	WOMEN *(b)*	IF "YES", WHICH SCHOOLS, COLLEGES OR CURRICULUMS *(c)*
		(1)
		(2)
		(3)

20. PREDOMINANT CALENDAR SYSTEM AT YOUR INSTITUTION

	(1) SEMESTER		(2) QUARTER		(3) TRIMESTER		(4) OTHER *(Specify)*

21. LEVEL OF OFFERING *("X" all that apply)*

	(1) LESS THAN ONE YEAR OF WORK BEYOND GRADE 12		(5) FIRST-PROFESSIONAL LEVEL		(9) OTHER *(Specify)*
	(2) AT LEAST 1 BUT LESS THAN 2 YEARS OF WORK BEYOND GRADE 12		(6) MASTER'S AND/OR WORK BEYOND THE FIRST-PROFESSIONAL DEGREE		(10)
	(3) AT LEAST 2 BUT LESS THAN 4 YEARS OF WORK BEYOND GRADE 12		(7) WORK BEYOND THE MASTER'S LEVEL BUT NOT AT DOCTOR'S LEVEL		(11)
	(4) 4- OR 5-YEAR BACCALAUREATE DEGREE-GRANTING PROGRAM		(8) DOCTOR OF PHILOSOPHY OR EQUIVALENT LEVEL		(12)

22. TYPE OF PROGRAM *("X" all that apply)*

	(1) TERMINAL-OCCUPATIONAL TRAINING AT THE CRAFTSMAN/CLERICAL LEVEL *(Below the level of technician)*		(4) LIBERAL ARTS AND GENERAL
	(2) TERMINAL-OCCUPATIONAL TRAINING AT THE TECHNICAL OR SEMIPROFESSIONAL LEVEL		(5) TEACHER PREPARATORY
	(3) 2 YEAR PROGRAM ACCEPTABLE FOR FULL CREDIT TOWARD A BACCALAUREATE DEGREE		(6) PROFESSIONAL

23. DOES YOUR INSTITUTE CONDUCT A SUMMER SESSION OFFERING COURSES CREDITABLE TOWARD A DEGREE?
☐ YES ☐ NO

24. DOES YOUR INSTITUTION HAVE A SEPARATELY ORGANIZED EVENING COLLEGE OFFERING COURSES CREDITABLE TOWARD A DEGREE?
☐ YES ☐ NO

25. DURING THE FALL TERM (1967), HOW MANY WERE ENROLLED IN YOUR INSTITUTION IN THE PROGRAMS SHOWN BELOW?

PROGRAMS (a)	NUMBER OF STUDENTS ENROLLED		
	TOTAL (b)	FULL-TIME (c)	PART-TIME (d)
(1) OCCUPATIONAL PROGRAMS			
(2) PROGRAMS LEADING TO A BACCALAUREATE DEGREE *(4 or 5 year)*			
(3) POSTBACCALAUREATE PROGRAMS *(Master's, First-Professional, and Doctoral only; report Postdoctoral Programs under "Other")*			
(4) OTHER *(Specify)*			

26. NUMBER OF STUDENTS WHO WERE GRADUATED LAST YEAR FROM A POST SECONDARY PROGRAM OF

(1) LESS THAN ONE YEAR	
(2) ONE BUT LESS THAN TWO ACADEMIC YEARS	
(3) TWO BUT LESS THAN FOUR YEARS	
(4) FOUR OR FIVE YEARS *(Baccalaureate)*	
(5) POSTBACCALAUREATE	

27. NAME OF AGENCY BY WHICH YOUR INSTITUTION IS LEGALLY AUTHORIZED TO PROVIDE A PROGRAM OF EDUCATION BEYOND HIGH SCHOOL

28. WHAT IS THE USUAL MINIMUM REQUIREMENT FOR ADMISSION TO YOUR INSTITUTION AS A FIRST-TIME STUDENT IN YOUR LOWEST POST-SECONDARY SCHOOL PROGRAM *(Check all that apply)*

	(1) ONLY THE ABILITY TO PROFIT FROM ATTENDANCE
	(2) HIGH SCHOOL GRADUATION OR RECOGNIZED EQUIVALENT
	(3) HIGH SCHOOL GRADUATION, PLUS AN INDICATION OF SUPERIOR ACADEMIC APTITUDE *(Class standing, grades, curriculum, particular school, test scores, etc.)*
	(4) TWO-YEAR COLLEGE GRADUATION
	(5) FOUR-YEAR COLLEGE GRADUATION
	(6) OTHER *(Specify)*

29. NAME AND TITLE OF RESPONDENT

30. AREA CODE-TELEPHONE NUMBER-EXTENSION

IDENTIFY CHIEF ADMINISTRATIVE OFFICERS ON PAGE 4

31. CHIEF ADMINISTRATIVE OFFICERS *(If one person performs more than one function, LIST HIM ONLY ONCE, in his more important function, leaving the lines for his lesser functions blank.)*

FUNCTION OF OFFICIAL *(a)*	FIRST NAME	MIDDLE INITIAL *(b)*	LAST NAME	EXACT TITLE *(c)*
(1) CHIEF EXECUTIVE OFFICER *(e.g. President, Chancellor, Director)*				
(2) CHIEF ACADEMIC OFFICER *(e.g. Dean, Provost, Vice-President)*				
(3) CHIEF BUSINESS OFFICER				
(4) REGISTRAR				
(5) ADMISSIONS OFFICER				
(6) DIRECTOR OF LIBRARY				
(7) DIRECTOR OF SUMMER SESSION				
(8) DIRECTOR OF EXTENSION				
(9) CHIEF STUDENT PERSONNEL OFFICER				
(10) DEAN OF MEN				
(11) DEAN OF WOMEN				
(12) RESEARCH ADMINISTRATIVE OFFICIAL *(Research Contracts)*				
(13) DIRECTOR OF INSTITUTIONAL RESEARCH *(Studies of the institution)*				
(14) DIRECTOR OF PUBLIC RELATIONS				
(15) DIRECTOR OF ALUMNI ASSOCIATION				
(16) DIRECTOR OF STUDENT FINANCIAL AID				
(17) DIRECTOR OF PLACEMENT SERVICES				
(18) DEANS OF SCHOOLS AND COLLEGES				
(19)				
(20)				
(21)				
(22)				
(23)				
(24)				
(25)				
(26)				
(27)				
(28)				
(29)				

APPENDIX B

COMPUTER PRINT-OUT OF SURVEY DATA

APPENDIX G - Computer printout

THIS SIDE FOR OE USE ONLY 100010

STATE	ALABAMA	CARD 01 COLS 14-33
INSTITUTION	ALABAMA A & M COLLEGE	CARD 01 COLS 34-58
FICE INST CODE	001007 OE INST CODE 100010	CARD 01 COLS 59-64
CITY	NORMAL	CARD 02 COLS 14-48
ZIP CODE	35762	CARD 02 COLS 49-53
TELEPHINE NUMBER		CARD 02 COLS 54-63
ACCREDITATION	MULTIPLE ENTRY PERMITTED: • AB (16) ARCH (20) CHEM (25) CHN (32) NUR (44) SPCNRG (50) • A (15) ART (21) DH (27) JOUR (33) OT (39) OPT (45) SW (51) • N (18) MT (22) DENT (28) LAW (34) PT (40) OSTEO (46) THEOL (52) • NM (17) JCH (23) ENG (29) LIB (35) RT (41) POD (47) VET (53) • S (19) SCR (24) ENGR (30) MRL (36) MED (42) PHRM (48) • M (20) BUS (25) TECH (31) PMT (37) MUS (43) PH (49)	CARD 03 COLS 14-53
CONTROL OR AFFILIATION	SINGLE ENTRY ONLY: FEDERAL 11 • STATE 12 LOCAL OR STATE AND LOCAL 13 INDEPENDENT NON-PROFIT 21 INCORPORATED AS PROFIT MAKING 25 ROMAN CATHOLIC 30 PROTESTANT JEWISH 80 GREEK ORTHODOX 91 RUSSIAN ORTHODOX 92 UNITARIAN-UNIVERSALIST 93 LATTER DAY SAINTS 94 SEVENTH DAY ADVENTISTS 95 OTHER • SPECIFY BELOW	CARD 03 COLS 64-65
STUDENT BODY	SINGLE ENTRY ONLY: MEN 1 WOMEN 2 • COED 3	CARD 03 COL 66
CALENDAR SYSTEM	SINGLE ENTRY ONLY: • SEMESTER 1 QUARTER 2 TRIMESTER 3 OTHER 4	CARD 03 COL 67
HIGHEST OFFERING	SINGLE ENTRY ONLY: LESS THAN 1 YEAR 1 1 BUT LESS THAN 2 YEARS 2 2 BUT LESS THAN 4 YEARS 3 4 OR 5 YEAR BACCALAUREATE DEGREE GRANTING PROGRAM 4 FIRST PROFESSIONAL DEGREE 5 • MASTER'S 6 BEYOND MASTER'S BUT LESS THAN DOCTORATE 7 DOCTORATE 8	CARD 03 COL 68
TYPE OF PROGRAM	MULTIPLE ENTRY PERMITTED: • TERMINAL OCCUPATIONAL-CRAFTSMEN/CLERICAL • TERMINAL OCCUPATIONAL-TECHNICAL/SEMI-PROFESSIONAL 2-YR ACCEPTABLE FOR FULL CREDIT TOWARD BACCALAUREATE • LIBERAL ARTS AND GENERAL • TEACHER PREPARATORY PROFESSIONAL	CARD 03 COL 69 CARD 03 COL 70 CARD 03 COL 71 CARD 03 COL 72 CARD 03 COL 73 CARD 03 COL 74
ENROLLMENT FALL-67	2671	CARD 03 COLS 75-80

ADMINISTRATIVE OFFICERS — OE INST CODE 100010

LINE NO	RANK SEQUENCE	ADMINISTRATIVE TITLE (LIMIT SIZE TO 30 LETTERS AND SPACES)	RELIGIOUS MILITARY OR OTHER TITLE (4 LETTER LIMIT)	FIRST NAME (14 LETTER LIMIT)	MI (2)	LAST NAME (15 LETTER LIMIT)
01	010	PRESIDENT		RICHARD	D	MORRISON
02	020	DEAN OF COLLEGE		HENRY		PONDER
03	030	TREASURER AND BUS MGR		LEANDER	R	PATTON
04	040	REGISTRAR		RALPH	H	LEE
05	050	LIBRARIAN		MINFORD	W	CONLEY
06	060	DEAN OF MEN		GENE		BRIGHT
07	070	DEAN OF STUDENTS		LEON	H	WELCHER
08	080	DEAN OF WOMEN		KATIE	W	LIGON
09	090	DIR OF PUB RELATIONS AND DEV		WILLIAM	O	ROBINSON
10	100	FINAN AIDS OFFICER		PERCY	W	LANIER
11	110	ARTS AND SCIENCES		VIVIAN	W	CHAMBERS
12	120	DIR GRADUATE STUDIES		LEON	W	BONNER
13	130	AGRICULTURE		WINFRED		THOMAS
14	140	BUS AND APPL SCI		WALTER	W	HOLLINS
15	150	ACTNG CHMN DIV OF EDUC		HENRY	W	BERRY
16	160	HOME ECONOMICS		ABIGAIL	A	HOBSON

APPENDIX C

INSTITUTIONAL CHARACTERISTICS OF COLLEGES AND UNIVERSITIES AS PUBLISHED IN EDUCATION DIRECTORY 1968-69, PART 3

MICHIGAN (Continued)

LIBRARIAN	MARGARET A DOWNEY
COORDINATOR STUDENT AFFAIRS	ALICE M PHELPS
CHAIRMAN OF RESEARCH	IRVING E SIGEL
DIRECTOR OF DEVELOPMENT	EDWARD A HOWELL
ALUMNI SECRETARY	ANNABELLE HIGGINS

INSTITUTION NAME-	MICHIGAN LUTHERAN COLLEGE
FICE INST CODE-	002289 OE INST CODE- 320397
CITY ADDRESS-	DETROIT
ZIP CODE-	48202
TELEPHONE-	313 873 6320
ACCREDITATION-	
AFFILIATION-	LUTHERAN CHURCH-MISSOURI SYNOD
STUDENT BODY-	COED
CALENDAR SYSTEM-	QUARTER
HIGHEST OFFERING-	4 OR 5 YEAR BACCALAUREATE DEGREE PROGRAM
TYPE OF PROGRAM-	OCCUPATIONAL-TECHNICAL/SEMI-PROFESSIONAL 2-YR ACCEPTABLE CREDIT FOR BACCALAUREATE LIBERAL ARTS AND GENERAL
ENROLLMENT-	732

PRESIDENT	JOHN F CHOITZ
ACADEMIC DEAN	DAVID FRIEDRICHS
BUSINESS MANAGER	LARRY HARABADIAN
ADMISSIONS COUNSELLOR	CHRISTOPHER MELIKAN
LIBRARIAN	EVELYN GUTOWSKE
DEAN OF STUDENTS	RICHARD KRENNING

INSTITUTION NAME-	MICHIGAN STATE UNIV
FICE INST CODE-	002290 OE INST CODE- 320410
CITY ADDRESS-	EAST LANSING
ZIP CODE-	48823
TELEPHONE-	517 355 1855
ACCREDITATION-	N BUS CHEM TED ENG FOR JOUR MUS NUR SW VET
CONTROL-	STATE
STUDENT BODY-	COED
CALENDAR SYSTEM-	QUARTER
HIGHEST OFFERING-	DOCTORATE
TYPE OF PROGRAM-	OCCUPATIONAL-TECHNICAL/SEMI-PROFESSIONAL LIBERAL ARTS AND GENERAL TEACHER PREPARATORY PROFESSIONAL
ENROLLMENT-	38,758

PRESIDENT	JOHN A HANNAH
PROVOST	HOWARD R NEVILLE
V PRES BUSINESS	PHILIP J MAY
REGISTRAR	HORACE C KING
DIR ADMISSIONS	TERRENCE J CAREY
DIRECTOR LIBRARIES	RICHARD E CHAPIN
DIR CONTINUING EDN SVC	ARMAND L HUNTER
V PRES STUDENT AFFAIRS	MILTON B DICKERSON
ASSOC DEAN STUDENTS	ELDON R NONNAMAKER
DIR PLACEMENT BUREAU	JOHN D SHINGLETON
ASST DEAN STUDENTS	LAURINE E FITZGERALD
DIR OFC OF INSTNL RES	PAUL L DRESSEL
DIR UNIVERSITY RELATIONS	JAMES H DENISON
DIR ALUMNI RELATIONS	JOHN R KINNEY
DIR FINANCIAL AIDS	HENRY C DYKEMA
DEAN COLL NATURAL SCIENCES	RICHARD U BYERRUM
DEAN COLL SOCIAL SCIENCES	C LELAND WINDER
DEAN COLL ARTS AND LETTERS	PAUL A VARG
DEAN MORRILL COLLEGE	D GORDON ROHMAN
DEAN UNIVERSITY COLLEGE	EDWARD A CARLIN
DEAN COLL HUMAN MEDICINE	ANDREW D HUNT JR
DEAN COLL VET MEDICINE	WILLIS W ARMISTEAD
DEAN COLL ENGINEERING	LAWRENCE VONTERSCH
DEAN COLL AGRICULTURE	THOMAS K COWDEN
DEAN COLL BUSINESS	ALFRED L SEELYE
DEAN COLL EDUCATION	JOHN E IVEY JR
DEAN COLL COMM ARTS	JACK M BAIN
DEAN COLL HOME ECON	JEANETTE A LEE
DEAN BRIGGS COLLEGE	FREDERIC B DUTTON
DEAN MADISON COLLEGE	HERBERT GARFINKEL

INSTITUTION NAME-	MICH TECH UNIV MAIN CAMPUS
FICE INST CODE-	002292 OE INST CODE- 320400
CITY ADDRESS-	HOUGHTON
ZIP CODE-	49931
TELEPHONE-	906 482 1600
ACCREDITATION-	N CHEM ENG
CONTROL-	STATE
STUDENT BODY-	COED
CALENDAR SYSTEM-	QUARTER
HIGHEST OFFERING-	DOCTORATE
TYPE OF PROGRAM-	OCCUPATIONAL-TECHNICAL/SEMI-PROFESSI LIBERAL ARTS AND GENERAL TEACHER PREPARATORY PROFESSIONAL
ENROLLMENT-	4,286

PRESIDENT	RAYMOND L SMITH
VIC PRES ACADEMIC AFF	DEAN W STEBBINS
CONTROLLER AND TREASURER	ERNEST J TOWNSEND
REGISTRAR AND DIR STUDENT SERV	THOMAS C SERMON
ASST DIR OF ADMISSIONS	ERNEST R GRIFF
DIRECTOR LIBRARY	MICHAEL V KRENITSKY
DIRECTOR SUMMER SESSION	THOMAS G ELLIS
DIRECTOR DIV CONT EDUC	G RALPH NOBLE
DEAN OF STUDENTS	HAROLD MEESE
DIRECTOR RESEARCH	THOMAS P EVANS
DIR INSTITUTIONAL ANALYSIS	DOUGLAS A STUART
ASST TO PRES DIR INST RELS	RICHARD T DUNNEBACKE
EXEC SEC ALUMNI ASSOC	THOMAS F HRUBY
FINANCIAL AIDS OFFICER	DONALD S HOLMAN
DIRECTOR PLACEMENT	JOHN R GOOCH
DEAN OF ENGINEERING	JAMES A KENT

INSTITUTION NAME-	MICH TECH UNIV LAKE SUPERIOR STATE C
FICE INST CODE-	002293 OE INST CODE- 329135
CITY ADDRESS-	SAULT STE MARIE
ZIP CODE-	49783
TELEPHONE-	906 632 6841
ACCREDITATION-	N TECH
CONTROL-	STATE
STUDENT BODY-	COED
CALENDAR SYSTEM-	QUARTER
HIGHEST OFFERING-	4 OR 5 YEAR BACCALAUREATE DEGREE PR(
TYPE OF PROGRAM-	OCCUPATIONAL-CRAFTSMEN/CLERICAL OCCUPATIONAL-TECHNICAL/SEMI-PROFESS: 2-YR ACCEPTABLE CREDIT FOR BACCALAU LIBERAL ARTS AND GENERAL PROFESSIONAL
ENROLLMENT-	1,434

CHANCELLOR	KENNETH J SHOLLDICE
VICE CHANCELLOR	KENNETH F LIGHT
CONTROLLER	LYLE F SHAW
REGISTRAR	DUANE R GRAHAM
ADMISSIONS OFFICER	JAMES E HONKANEN
DIRECTOR OF LIBRARY	ANN E PATTERSON
DIRECTOR REGIONAL SERVICES	WALTER N GENDZWILL
DEAN OF STUDENTS	BERNARD M SMITH
DEAN OF WOMEN	MARGARET F HOWE
DIRECTOR COLLEGE RELATIONS	PAUL E RIPLEY
DIRECTOR PLACEMENT	WILLIAM T HUNSELL

INSTITUTION NAME-	MID MICHIGAN CMTY COL
FICE INST CODE-	006768 OE INST CODE- 320413
CITY ADDRESS-	GLADWIN
ZIP CODE-	48624
TELEPHONE-	517 426 8545
ACCREDITATION-	
CONTROL-	LOCAL
STUDENT BODY-	COED
CALENDAR SYSTEM-	SEMESTER
HIGHEST OFFERING-	2 BUT LESS THAN 4 YEARS
TYPE OF PROGRAM-	LIBERAL ARTS AND GENERAL
ENROLLMENT-	

PRESIDENT	EUGENE W GILLASPY
DEAN ACADEMIC INSTRUCTION	CURTIS S MURTON
DIRECTOR BUSINESS AFFAIRS	LAURA J FINUCANE
DEAN STUDENT AFFAIRS	ALLEN T NICHOLS
DEAN INSTRUCTIONAL MATERIALS	DAVID YOUNG
DEAN APPLIED ARTS	FRANCIS J MITCHELL

INSTITUTION NAME-	MONROE COUNTY CMTY COL
FICE INST CODE-	002294 OE INST CODE- 320414
CITY ADDRESS-	MONROE
ZIP CODE-	48161
TELEPHONE-	313 242 7300
ACCREDITATION-	
CONTROL-	LOCAL
STUDENT BODY-	COED
CALENDAR SYSTEM-	SEMESTER
HIGHEST OFFERING-	2 BUT LESS THAN 4 YEARS
TYPE OF PROGRAM-	OCCUPATIONAL-TECHNICAL/SEMI-PROFESS 2-YR ACCEPTABLE CREDIT FOR BACCALAU

APPENDIX D

REPORT OF EMPLOYEES IN HIGHER EDUCATION FROM NUMBERS AND CHARACTERISTICS OF EMPLOYEES IN INSTITUTIONS OF HIGHER EDUCATION

TABLE 5.-- PROFESSIONAL AND NONPROFESSIONAL EMPLOYEES, BY PRIMARY FUNCTION, EMPLOYMENT

CONTROL 1/	LEVEL 2/	STATE AND INSTITUTION	TOTAL NUMBER OF EMPLOYED PERSONNEL						PROFESSIONAL				
			PROFESSIONALS			NONPROFESSIONALS			RESIDENT INSTRUCTION AND DEPARTMENTAL RESEARCH			ORGANIZED	
									SENIOR STAFF	JUNIOR STAFF		SENIOR STAFF	JUNIOR
			TOTAL PERSONS		FTE OF PART-TIME	TOTAL PERSONS		FTE OF PART-TIME	FULL-TIME	FULL-TIME	PART-TIME	FULL-TIME	FULL-TIME
			FULL-TIME	PART-TIME		FULL-TIME	PART-TIME						
1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	F	JOHN BROWN UNIVERSITY	39	10	3	101	3	1	37	0	0	0	0
2	F	LITTLE ROCK UNIVERSITY	85	91	24	38	6	4	70	0	0	0	0
2	F	OUACHITA BAPTIST UNIV	89	72	21	2	0	0	87	0	8	0	0
2	F	PHILANDER SMITH COLLEGE	67	14	4	33	216	55	39	0	0	0	0
1	T	PHILLIPS CO CMTY COLLEGE	14	2	1	7	0	0	13	0	0	0	0
2	F	SHORTER COLLEGE	11	6	3	7	4	2	9	0	0	0	0
2	T	SOUTHERN BAPTIST COLLEGE	34	4	1	1	0	0	32	0	0	0	0
1	F	SOUTHERN STATE COLLEGE	132	12	4	77	474	158	96	0	0	0	0
1	U	UNIVERSITY OF ARKANSAS	1,731	898	262	2,048	842	263	476	108	664	198	153
		TOTAL PUBLIC	2,609	956	283	2,826	3,070	959	1,209	108	687	199	153
		TOTAL PRIVATE	710	245	67	459	745	202	517	0	18	4	1
		STATE TOTAL	3,319	1,201	350	3,285	3,815	1,161	1,726	108	705	203	154
		CALIFORNIA											
1	F	CALIFORNIA ST COL HAYWARD	310	112	39	291	60	26	262	2	25	3	6
1	T	ANTELOPE VALLEY COLLEGE	66	83	24	37	100	35	60	0	0	0	0
2	F	AZUSA PACIFIC COLLEGE	54	14	7	29	30	11	33	3	3	0	0
1	T	BAKERSFIELD COLLEGE	212	8	5	88	156	52	192	0	0	0	0
2	F	BETHANY BIBLE COLLEGE	48	4	1	18	6	2	45	0	0	0	0
2	F	BIOLA COLLEGE	84	17	6	94	299	148	70	2	4	0	0
2	F	BROOKS INST PHOTOGRAPHY	24	5	1	7	1	0	13	4	0	3	0
1	T	CABRILLO COLLEGE	86	31	13	59	135	34	80	0	15	0	0
2	F	CALIF BAPTIST THEOL SEM	16	2	1	21	7	4	10	0	0	0	0
2	F	CALIFORNIA BAPTIST COL	30	27	13	32	84	27	27	0	0	0	0
2	F	CALIF COL OF ARTS & CRAFT	40	45	16	24	5	3	27	0	0	0	0
2	F	CALIFORNIA PODIATRY COL	24	13	4	15	2	1	20	1	0	2	0
2	T	CALIFORNIA CONCORDIA COL	21	5	2	0	6	1	15	0	0	0	0
2	F	CALIFORNIA INST OF TECH	3,452	406	149	2,723	386	95	480	0	363	2,064	0
2	F	CALIFORNIA LUTHERAN COL	79	19	4	83	206	39	59	0	1	0	0
1	F	CALIFORNIA MARITIME ACAD	24	0	0	0	0	0	22	0	0	0	0
2	F	SAN FRISCO ART INST COL	38	27	9	18	15	5	30	0	0	0	0
1	F	CAL ST COL SAN BERNARDINO	62	10	4	86	12	5	45	0	0	0	0
1	F	CAL STATE POLY SN LUIS OB	537	38	13	555	67	33	454	0	14	0	0
1	F	CAL ST POLY COL POMONA	351	83	24	328	730	147	299	0	2	0	0
2	F	CALIFORNIA WESTERN UNIV	101	27	5	166	3	1	85	0	0	0	0
2	T	CENTER FOR EARLY EDUC	1	25	6	2	0	0	0	0	0	0	0
1	T	CERRITOS COLLEGE	231	86	40	126	69	22	202	0	0	0	0
1	T	CHABOT COLLEGE	155	151	39	99	162	33	126	0	0	0	0
1	T	CHAFFEY COLLEGE	136	94	26	102	121	32	116	0	0	0	0
1	F	CHICO STATE COLLEGE	446	982	235	385	50	22	415	0	800	0	0
2	F	CALIF INST OF THE ARTS	15	64	27	27	2	1	13	0	0	0	0
1	T	CITRUS JR COL	100	158	41	80	16	8	88	0	0	1	0
1	T	CITY COL OF SAN FRANCISCO	320	37	11	110	10	4	284	0	0	0	0
2	F	CLAREMONT MENS COLLEGE	66	17	6	72	0	0	50	0	12	0	0
1	T	COALINGA COLLEGE	41	0	0	36	62	17	39	0	0	1	0
1	T	COLLEGE OF THE DESERT	70	24	4	16	0	0	67	0	0	0	0
2	F	COL OF THE HOLY NAMES	87	47	16	30	25	8	54	0	1	0	0
2	F	LOMA LINDA UNIVERSITY	588	364	129	586	249	92	176	82	10	15	20
2	F	COLLEGE OF NOTRE DAME	61	65	22	31	61	19	35	0	1	0	0
2	F	COL OF OUR LADY OF MERCY	12	22	9	14	37	9	3	0	0	0	0
2	U	UNIVERSITY OF THE PACIFIC	238	317	90	303	18	6	217	0	73	0	0
1	T	COLLEGE OF SAN MATEO	336	274	59	259	94	27	307	0	0	1	0
1	T	COLLEGE OF THE SISKIYOUS	46	50	16	1	0	0	32	0	0	0	0
1	T	COMPTON DISTRICT JR COL	85	92	26	72	14	7	80	0	0	0	0
1	T	CONTRA COSTA COLLEGE	159	60	15	91	2	1	146	0	0	0	0
1	T	CYPRESS COLLEGE	53	25	6	17	77	27	51	0	0	0	0
2	T	DEEP SPRINGS COLLEGE	10	0	0	0	1	0	4	0	0	0	0
1	T	DIABLO VALLEY COLLEGE	225	99	29	216	9	1	216	0	0	0	0
2	F	DOMINICAN COL SAN RAFAEL	59	40	13	6	2	1	49	0	2	0	0
1	T	EAST LOS ANGELES COLLEGE	177	348	104	0	0	0	173	0	0	0	0
1	T	EL CAMINO COLLEGE	341	96	34	247	2	0	323	0	0	0	0
1	T	FOOTHILL COLLEGE	540	38	10	52	0	0	235	0	0	0	0
1	F	FRESNO ST COL	575	130	42	431	588	112	442	32	13	6	0
1	T	FULLERTON JR COLLEGE	316	82	32	156	88	39	290	0	0	0	0
2	F	PEPPERDINE COLLEGE	79	148	54	85	15	7	59	0	0	0	0
1	T	GLENDALE COLLEGE	135	15	6	66	22	7	109	0	0	5	0
2	F	GOLDN GATE BAPT THEOL SEM	27	3	1	16	34	13	18	0	0	0	0
2	F	GOLDEN GATE COLLEGE	32	134	38	19	20	10	17	0	21	0	0
1	T	GOLDEN WEST COLLEGE	77	0	0	0	0	0	61	0	0	0	0
1	T	GROSSMONT COLLEGE	122	149	45	0	0	0	100	0	0	0	0
1	T	HARTNELL COLLEGE	95	49	15	51	0	0	92	0	0	0	0
2	F	HARVEY MUDD COLLEGE	54	15	6	36	83	20	40	3	1	0	0
2	F	HEALD ENGR COLLEGE	54	3	1	0	0	0	52	1	3	0	0
1	F	HUMBOLDT STATE COLLEGE	267	189	48	183	340	81	217	1	39	0	0
2	F	IMMACULATE HEART COLLEGE	74	31	12	46	7	2	58	0	1	1	0
1	T	IMPERIAL VALLEY COLLEGE	45	14	3	1	1	0	43	0	0	0	0
1	T	LANEY COLLEGE	155	11	5	53	3	1	126	0	0	0	0
2	F	LA SIERRA COLLEGE	139	32	18	46	16	9	64	6	0	0	0
1	T	LASSEN COLLEGE	21	6	2	1	0	0	20	0	0	0	0
2	F	LA VERNE COLLEGE	44	18	6	27	34	6	38	0	0	0	0

STATUS, CONTROL AND LEVEL OF INSTITUTION, STATE, AND INSTITUTION:

STAFF												
RESEARCH	LIBRARY		EXTENSION AND PUBLIC SERVICE			AUXILIARY ENTERPRISES	SCHOOLS OPERATED BY THE INSTITUTION		OTHER PROFESSIONAL PERSONNEL	STATE AND INSTITUTION	LEVEL 2/	CONTROL 1/
STAFF	PROFESSIONAL LIBRARIANS	OTHER PROFESSIONALS	FORMAL INSTRUCTION	CONSULTATION	OTHER		ELEMENTARY	SECONDARY				
PART-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME	FULL-TIME			
15	16	17	18	19	20	21	22	23	24	25	26	27
0	2	0	0	0	0	0	0	0	0	JOHN BROWN UNIVERSITY	F	2
0	3	0	0	0	0	1	0	0	11	LITTLE ROCK UNIVERSITY	F	2
1	2	0	0	0	0	0	0	0	0	OUACHITA BAPTIST UNIV	F	2
0	2	2	0	0	0	1	0	0	23	PHILANDER SMITH COLLEGE	F	2
0	1	0	0	0	0	0	0	0	0	PHILLIPS CO CMTY COLLEGE	T	1
0	0	0	0	0	0	0	0	0	2	SHORTER COLLEGE	F	2
0	1	1	0	0	0	0	0	0	0	SOUTHERN BAPTIST COLLEGE	T	2
0	4	0	0	0	0	4	0	0	28	SOUTHERN STATE COLLEGE	F	1
121	26	0	2	0	419	45	0	0	304	UNIVERSITY OF ARKANSAS	U	1
121	72	3	3	0	424	56	0	0	392	TOTAL PUBLIC		
6	18	4	0	0	1	16	25	35	89	TOTAL PRIVATE		
127	90	7	3	0	425	72	25	35	471	STATE TOTAL		
										CALIFORNIA		
8	16	0	0	0	0	0	0	0	27	CALIFORNIA ST COL HAYWARD	F	1
0	1	0	0	0	0	0	0	0	5	ANTELOPE VALLEY COLLEGE	T	1
0	5	0	0	0	0	0	0	0	13	AZUSA PACIFIC COLLEGE	F	2
0	3	0	0	0	0	0	0	0	17	BAKERSFIELD COLLEGE	T	1
0	1	0	0	0	1	0	0	0	0	BETHANY BIBLE COLLEGE	F	2
0	3	0	0	0	0	3	0	0	6	BIOLA COLLEGE	F	2
0	0	0	0	0	0	2	0	0	2	BROOKS INST PHOTOGRAPHY	F	2
0	3	0	1	0	0	0	0	0	2	CABRILLO COLLEGE	T	1
0	2	0	0	0	0	2	0	0	2	CALIF BAPTIST THEOL SEM	F	2
0	2	1	0	0	0	0	0	0	0	CALIFORNIA BAPTIST COL	F	2
0	2	0	0	0	3	3	0	0	5	CALIF COL OF ARTS & CRAFT	F	2
1	1	0	0	0	0	0	0	0	0	CALIFORNIA PODIATRY COL	F	2
0	0	0	0	0	0	4	0	2	0	CALIFORNIA CONCORDIA COL	T	2
0	13	7	0	0	0	10	0	0	908	CALIFORNIA INST OF TECH	F	2
0	3	0	0	0	0	2	0	0	15	CALIFORNIA LUTHERAN COL	F	2
0	2	0	0	0	0	0	0	0	0	CALIFORNIA MARITIME ACAD	F	1
0	1	0	0	0	0	1	0	0	6	SAN FRISCO ART INST COL	F	2
0	4	0	0	0	0	1	0	0	12	CAL ST COL SAN BERNARDINO	F	1
0	8	8	0	0	0	7	0	0	60	CAL STATE POLY SN LUIS OB	F	1
0	10	0	0	0	0	2	0	0	40	CAL ST POLY COL POMONA	F	1
0	1	6	0	0	0	1	0	0	8	CALIFORNIA WESTERN UNIV	F	2
0	1	0	0	0	0	0	0	0	0	CENTER FOR EARLY EDUC	T	2
0	4	0	3	0	0	0	0	0	22	CERRITOS COLLEGE	T	1
0	7	0	0	0	1	0	0	0	21	CHABOT COLLEGE	T	1
0	2	0	0	0	1	0	0	0	19	CHAFFEY COLLEGE	T	1
0	17	1	0	0	0	5	0	0	0	CHICO STATE COLLEGE	F	1
0	1	0	0	1	0	0	0	0	0	CALIF INST OF THE ARTS	F	2
0	1	0	0	0	0	0	0	0	10	CITRUS JR COL	T	1
0	5	0	0	0	0	0	0	0	31	CITY COL OF SAN FRANCISCO	T	1
0	0	0	0	0	0	5	0	0	11	CLAREMONT MENS COLLEGE	F	2
0	1	0	0	0	0	0	0	0	0	COALINGA COLLEGE	T	1
0	3	0	0	0	0	0	0	0	0	COLLEGE OF THE DESERT	T	1
0	1	2	0	0	0	0	0	0	24	COL OF THE HOLY NAMES	F	2
5	7	1	0	7	0	280	0	0	0	LOMA LINDA UNIVERSITY	F	2
0	1	1	0	1	1	1	10	0	11	COLLEGE OF NOTRE DAME	F	2
0	1	0	0	0	0	1	0	0	7	COL OF OUR LADY OF MERCY	F	2
0	9	0	0	0	0	12	0	0	0	UNIVERSITY OF THE PACIFIC	U	2
0	1	6	4	0	6	0	0	0	11	COLLEGE OF SAN MATEO	T	1
0	1	0	0	0	0	15	0	0	0	COLLEGE OF THE SISKIYOUS	T	1
0	2	0	0	0	0	0	0	0	3	COMPTON DISTRICT JR COL	T	1
0	3	0	1	0	0	0	0	0	9	CONTRA COSTA COLLEGE	T	1
0	2	0	0	0	0	0	0	0	0	CYPRESS COLLEGE	T	1
0	0	0	0	0	0	4	0	0	2	DEEP SPRINGS COLLEGE	T	2
0	4	0	5	0	0	0	0	0	0	DIABLO VALLEY COLLEGE	T	1
0	5	0	0	0	0	3	0	0	2	DOMINICAN COL SAN RAFAEL	F	2
0	4	0	0	0	0	0	0	0	0	EAST LOS ANGELES COLLEGE	T	1
0	5	0	0	0	0	0	0	0	13	EL CAMINO COLLEGE	T	1
0	7	0	0	0	1	0	0	0	296	FOOTHILL COLLEGE	T	1
0	13	13	0	0	0	18	7	0	44	FRESNO ST COL	F	1
0	1	5	0	0	0	5	0	0	15	FULLERTON JR COLLEGE	T	1
0	1	0	1	0	0	2	0	0	16	PEPPERDINE COLLEGE	F	2
0	2	8	0	0	0	0	0	0	16	GLENDALE COLLEGE	T	1
0	2	0	0	0	0	2	0	0	5	GOLDN GATE BAPT THEOL SEM	F	2
0	2	0	0	0	0	1	0	0	12	GOLDEN GATE COLLEGE	F	2
0	3	1	0	0	0	0	0	0	12	GOLDEN WEST COLLEGE	T	1
0	4	0	0	0	0	0	0	0	16	GROSSMONT COLLEGE	T	1
0	3	0	0	0	0	0	0	0	0	HARTNELL COLLEGE	T	1
1	1	0	0	0	0	0	0	0	10	HARVEY MUDD COLLEGE	F	2
0	1	0	0	0	0	0	0	0	0	HEALD ENGR COLLEGE	F	2
20	4	10	0	8	0	1	10	0	24	HUMBOLDT STATE COLLEGE	F	1
0	2	4	0	0	0	0	0	0	9	IMMACULATE HEART COLLEGE	F	2
0	2	0	0	0	0	0	0	0	0	IMPERIAL VALLEY COLLEGE	T	1
0	3	0	0	0	0	0	0	0	26	LANEY COLLEGE	T	1
0	7	0	0	0	0	35	0	0	27	LA SIERRA COLLEGE	F	2
0	1	0	0	0	0	0	0	0	0	LASSEN COLLEGE	T	1
0	2	1	0	0	0	0	0	0	3	LA VERNE COLLEGE	F	2

APPENDIX E

CODING SHEET FOR DATA OF THIS STUDY

DATA SHEET

Two-Year College Structure
and Function

Name Code	_/_/_/_/_/_/ (6)
Enrollment Size	_/_/_/_/_/_/ (6)
Age	_/_/ (2)
Faculty Size	_/_/_/_/ (4)
Administrative Size	_/_/ (2)
Budget	_/_/_/_/_/_/_/_/ (8)
Voc. Programs	_/_/ (2)
Transfer LAS	_/_/ (2)
Total Programs	_/_/ (2)
Tech. Voc. Courses	_/_/_/_/ (4)
Bus. Courses	_/_/_/ (3)
LAS Courses	_/_/_/_/ (4)
Total Courses	_/_/_/_/_/ (5)
Organization Levels	_/_/ (2)
Horizontal Div. 2nd Level	_/_/ (2)
Horizontal Div. 3rd Level	_/_/ (2)
VP Instructional Division Voc. Tech. Combined Level	_/_/ (2)
Voc. Tech. Dean Separate Level	_/_/ (2)
Highest Sep. Level Business	_/_/ (2)
Highest Sep. Level Technical	_/_/ (2)
Division Organizational Level	_/_/ (2)
Department Organizational Level	_/_/ (2)
Community Service Adult Educational Level	_/_/ (2)
Director, Dean of Evening College	_/_/ (2)
LRC Level	_/_/ (2)
Library Volumes	_/_/_/_/_/ (5)

All digits will be punched right justified, fill remaining spaces with zero.